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UNITED STATES METRIC BOARD. A STUDY OF METRIC MEASUREMENT AND L--ETC(U)

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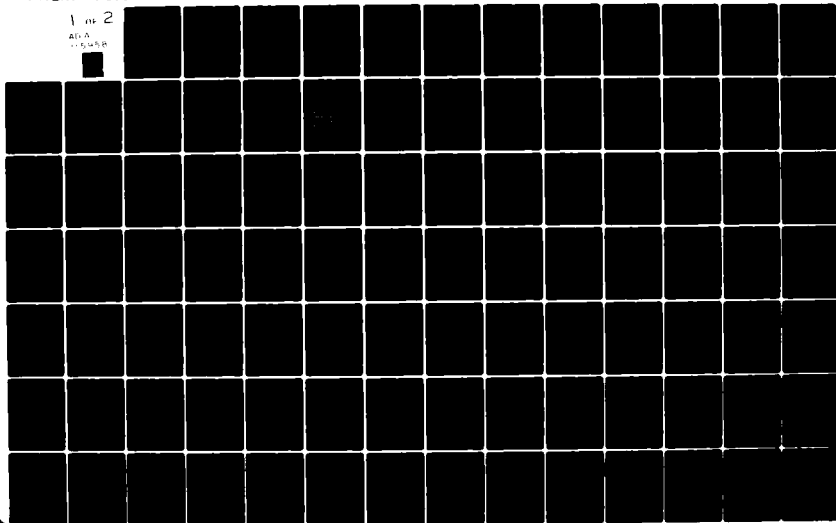
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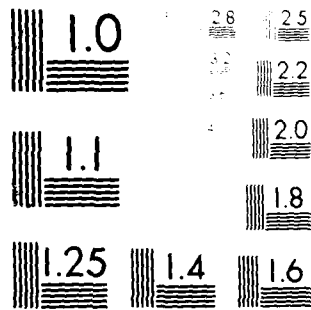
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UNITED STATES METRIC BOARD  
A STUDY OF METRIC MEASUREMENT  
AND LEGISLATION  
FINAL REPORT - VOLUME 1

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September 10, 1979

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<p>The report presents the results of the study question: does a need exist for an effective change mechanism that will accommodate metric conversion at all levels of government? The results of the study provided the United States Metric Board with information which would enable the Agency to report to the Congress on the need for a new structural mechanism.</p> <p>The report was organized in an attempt to logically structure a very complex set of issues for the reader. The report describes the current United States</p>			

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metric environment, and the legislative and regulatory environment within the United States. It analyzes the need for an effective change mechanism and outlines the alternative change mechanisms identified. The study presents alternative change options and the study recommendations, as well as describing the data collection methodology. Finally, the report summarizes the relevant experiences of Canada and Australia.

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UNITED STATES METRIC BOARD  
A STUDY OF METRIC MEASUREMENT  
AND LEGISLATION  
FINAL REPORT - VOLUME 1

September 10, 1979

Prepared under Contract A0-A06-78-00-1347

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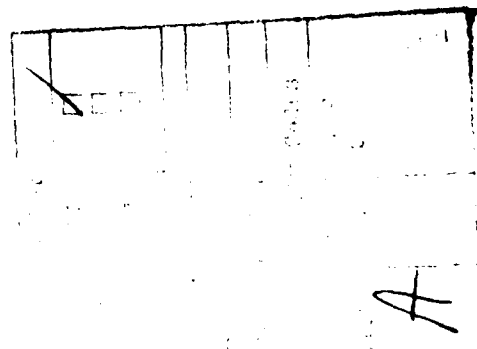
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## I. INTRODUCTION

This report presents the results of a study of metric measurement and legislation performed by Middlesex Research Center, Inc. for the United States Metric Board. The study was performed to satisfy the requirements established by Section 6(11) of the U.S. Metric Conversion Act of 1975.

### A. STUDY BACKGROUND

On December 23rd, 1975, Public Law 94-168 (known as the Metric Conversion Act of 1975) was enacted. Section 3 of that Act established a voluntary conversion program for the United States, which was characterized as follows: "It is therefore declared that the policy of the United States shall be to coordinate and plan the increasing use of the metric system in the United States and to establish the United States Metric Board to coordinate the voluntary conversion to the metric system."

Section 6 of the Act outlines the functions of the Board: "It shall be the function of the Board to devise and carry out a broad program of planning, coordination, and public education..." In Paragraph 11 of Section 6, Congress required the U.S. Metric Board to report to Congress and the President regarding the impact of metric change on legislative and regulatory issues. Section 6(11) states: "In carrying out this program, the Board shall submit to the Congress and to the President, not later than one year after the date of enactment of the Act making appropriations for carrying out this Act, a report on the need to provide an effective structural mechanism for converting customary units to metric units in statutes, regulations, and other laws at all levels of government, on a coordinated and timely basis, in response to voluntary conversion programs adopted and implemented by various sectors of society under the auspices and with the approval of the Board. If the Board determines that such a need exists, such report shall include recommendations as to appropriate and effective means for establishing and implementing such a mechanism."

To establish the proper perspective for the study, it is important that certain key issues be understood. Taken individually, these key issues are not particularly challenging. However, when they are combined, as they are at this time, the result is a very complex and challenging problem. The key issues that have combined to shape this study are:

- . A change to metric measurement units has been underway for many years in some sectors of the U.S. economy.
- . The rate of change to the use of metric units appears to be accelerating throughout the country in many sectors of industry.

- . The United States has established a very complex legal and regulatory structure involving Federal, state, and municipal governmental units.
- . Over the past 200 years, governmental bodies at all levels have enacted laws and regulations which address virtually every facet of business transactions.
- . Many of these laws and regulations incorporate our customary measurement units, either directly in their text, or indirectly by reference to standards.

#### B. STUDY APPROACH

The study was conducted in three phases. Phase I included basic research and data collection. Phase II addressed analysis and recommendations regarding the need for an effective change mechanism and the alternative change mechanisms. Phase III included structuring of recommendations; preparation of the draft report; reviews of the draft; and final editing, typing, and reproduction.

The requirement to study legislative and regulatory issues at "all levels of government" dictated judicious use of resources so that meaningful and usable study results could be produced with an expenditure of reasonable research efforts. To accommodate this requirement of the study, a selected number of Federal agencies were reviewed in depth. Contact was established with all 55 states and territories, and a representative number of municipal governments were studied. To determine the current status of the voluntary conversion efforts of various industrial sectors, the American National Metric Council sector committees were contacted.

To establish a consensus regarding the practicality of the recommendations, a Legal Review Panel was established. This Panel, with representatives from municipal, state, and Federal governmental agencies, interacted with the study team at three stages. First, the Panel was involved in a review of the overall study design. Second, the Panel reviewed the various change mechanisms which were identified. And last, the Panel was involved in a review of the recommended change mechanisms before they were finalized.

The main sections of this report have been organized in an attempt to logically structure a very complex set of issues for the reader. The material is presented in the following sections:

- . II describes the current United States metric environment.
- . III describes the legislative and regulatory environment within the United States.
- . IV analyzes the need for an effective change mechanism.

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- . V outlines the alternative change mechanisms identified.
- . VI presents alternative change options.
- . VII presents the study recommendations.
- . VIII describes the Legal Advisory Panel.
- . IX describes the data collection methodology.
- . X summarizes the relevant experiences of Canada and Australia.

## II. THE UNITED STATES METRIC ENVIRONMENT

The current environment for metric change in the United States provides a foundation for the study results and recommendations contained in this report. The major issues and events which have helped to create this environment are briefly summarized in Section A of this chapter. Information relative to the current status of metric conversion programs in the U.S. is also provided, followed by a description of Federal and state legislation which addresses metric measurement units.

### A. HISTORICAL BACKGROUND

The United States' quest for a simplified modern measurement system began in 1790 with a report to the Congress by Thomas Jefferson on a proposed decimal measurement and monetary system. Congress subsequently accepted Jefferson's recommendation for a decimal monetary system; however, they chose not to accept his recommendations for a decimal measurement system. The first serious consideration of adopting the metric measurement system was recorded in a report by John Quincy Adams to the Congress in 1821. In his report, Adams carefully analyzed both the advantages and disadvantages of the metric measurement system, which sparked controversial discussions for many years to come. Adams' conclusion was that the timing was not yet right for the United States to adopt the metric measurement system; and, as a result, Congress took no action.

In 1866, the use of metric measurement was again raised. Congress enacted legislation that made it legal to use the metric system for the transaction of business in the United States. Since this was the first official legislative action involving metric measurement units, it serves as a starting point for future analysis. "It shall be lawful throughout the United States of America to employ the weights and measures of the metric system, and no contract or dealing or pleading in any court shall be deemed invalid or liable to objection because the weights or measures expressed or referred to therein are weights or measures of the metric system." (RS Section 3569;15 USC Section 204.) At the same time, Congress declared that certain tables of equivalence between the metric system and customary units would be recognized in the construction of contracts and in all legal proceedings (RS Section 3570;15 USC Section 205).

The metric system was promoted to international prominence with the signing of the Treaty of the Meter following five years of international meetings between 1860 and 1875. This established a world repository and laboratory, the International Bureau of Weights and Measures. The treaty provided for the construction of new metric measurement standards and the distribution of accurate copies to each participating country. As a participant in the treaty, the United States received its standards in 1889. Four years later the Secretary of the Treasury, by administrative order, declared the new metric standards to be the Nation's "fundamental

standards" of length and mass. Subsequently, U.S. customary units were officially defined in terms of fractions of the International System of Units.

In the first half of this century, the metric system of measurement was adopted by many countries throughout the world. However, attempts to introduce the metric measurement system in the United States were not successful. As science and technology rapidly expanded, new measurement units were often created; and thus, variations of the so-called standardized metric measurement system were created. This lack of standardization was recognized in 1960 when the General Conference on Weights and Measures adopted a revised and simplified version of the metric measurement system, formally titled *Système International d'Unités*, abbreviated SI.

As interest in metric measurement units increased, Congress enacted the Metric Study Act, Public Law 90-472, in August of 1968. This Act directed the Secretary of Commerce to conduct a program of investigation, research, and survey to determine the impact of increasing worldwide use of the metric system on the United States. The results of that study were submitted to Congress in a twelve-volume report in July of 1971. In this report to Congress, entitled A Metric America - A Decision Whose Time Has Come, the Secretary of Commerce recommended that:

- . The United States change to the International Metric System deliberately and carefully.
- . This be done through a coordinated national program.
- . The Congress assign the responsibility for guiding the change, anticipating the kinds of special problems described in the report, to a central coordinating body responsive to all sectors of our society.
- . Within this guiding framework, detailed plans and timetables be worked out by these sectors themselves.
- . Early priority be given to educating every American schoolchild and the public at large to think in metric terms.
- . Immediate steps be taken by Congress to foster U.S. participation in international standards activities.
- . In order to encourage efficiency and minimize the overall costs to society, the general rule should be that any changeover costs should "lie where they fall."
- . The Congress, after deciding on a plan for the nation, establish a target date ten years ahead, by which time the U.S. will have become predominantly, though not exclusively, metric.
- . There be a firm Government commitment to this goal.

Following the Secretary of Commerce's report, the Administration introduced legislation that would have established a metric conversion program and a national metric conversion board. Debate over this legislation and alternative proposals continued until December of 1975, when the Congress enacted Public Law 94-168, the Metric Conversion Act of 1975. This legislation, which established the U.S. Metric Board and the voluntary metric conversion program, is included as Appendix A to this report.

#### B. STATUS OF VOLUNTARY CONVERSION PROGRAMS

It is important when reviewing the recommendations of this report that the current status of voluntary conversion within the U.S. be understood. After the Department of Commerce report was issued in 1971, various U.S. industrial firms chose to initiate metric conversion programs. These programs have been undertaken voluntarily, as was the intent of the Metric Conversion Act. A decision to initiate metric conversion programs has generally been based on the overall economics of that decision or on the demand for metric products in export markets.

A summary of the current status of metric conversion programs is provided in the following paragraph. For more specific information regarding the status of metric conversion programs within particular industries, the American National Metric Council (ANMC) can provide detailed data.

To facilitate the planning of metric conversion programs, ANMC has structured its sector committees into six functional areas; e.g.:

- . Materials
- . Engineering Industries
- . Construction Industries
- . Consumer Products
- . Education and Training
- . Food and Grocery Products

In past years, metric programs have focused primarily on the materials and engineering industries, with some activity in selected food and grocery products and the educational and training categories. Various sector committees (see Exhibit A for sectors) within the six functional areas have produced draft sector conversion plans. Some of these plans have identified tentative target dates for various sector conversion activities. The extent to which these plans reflect a broad consensus among an industry group is not known. They do, however, reflect the current thinking of those ANMC members who participated in the plan preparation. A summary of these activities and tentative conversion dates is presented in Exhibit B. One metric conversion program, the wine and liquor industry, required changes in Federal and state legislation. Because alcoholic beverages are a regulated industry, the determination of acceptable metric sizes for new

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bottles was coordinated by the Bureau of Alcohol, Tobacco, and Firearms (BATF). However, the corresponding Federal tax laws for liquor and wine products were not converted so as to be based on metric quantities, but continue to exist as a tax rate per gallon. Some states have not only changed their laws and regulations to reflect the new metric sizes, but have also made changes which base taxes on metric units.

#### C. STATUS OF GOVERNMENT CONVERSION PROGRAMS

Since the passage of the Metric Conversion Act of 1975, various Federal agencies have initiated metric conversion programs. Some agencies have initiated rather aggressive programs to change internal reporting, procurement requirements, and external reporting to metric units in a logical fashion. A number of agencies have issued policy directives stating that their intent is to convert to metric when it is reasonable. Other agencies have initiated changes in various sections of the Code of Federal Regulations (CFR's) so as to reflect metric equivalents for measurement units. In some cases, these metrics units are soft converted equivalents; in other cases, they are rationalized metric sizes.

In the early phases of our study, both Middlesex Research Center and the U.S. Metric Board attempted to contact over 36 Federal agencies to determine the status of their metric conversion planning. A summary of these responses, shown in Exhibit C, shows that 13 of these agencies have actually issued metric conversion policies and another five agencies have draft policies under development.

The Interagency Committee on Standards Policy (ICSP) established a Metrication Subcommittee in June 1975 because of the increasing metrication activities within Federal agencies and because a Federal metric conversion act appeared to be imminent. The original purposes of the Metrication Subcommittee were to:

- . facilitate an exchange of information on metrication;
- . assist joint Federal agency metrication efforts;
- . provide liaison and interface between governmental and private sector standards organizations concerning metrication; and
- . provide guidance in the implementation and use of the International System of Units (SI).

To increase the effectiveness of the Metrication Subcommittee, the Secretary of Commerce sent a letter to the heads of 48 departments and agencies asking each of them to appoint a "Metric Coordinator." The coordinator would represent his agency in the coordination activities of the ICSP Metrication Subcommittee, including liaison with the U.S. Metric Board. As of December 1977, 42 agencies had metric coordinators. This expanded Subcommittee held meetings during 1976 and 1977.



An Executive Board of eight members was established by the (ICSP) Chairman in January 1977 and met during that year in order to assist the Chairman in managing the operations of the Subcommittee and to help in defining the future role of the Subcommittee. Support for the Executive Secretary and administrative support for the Subcommittee have been supplied by the National Bureau of Standards in the Department of Commerce.

The Subcommittee is establishing "divisions" which are composed of agencies having related metrication interests. Each division will coordinate related activities among agencies. The actual implementation of metric change will be done within and by the Federal agencies. The Subcommittee adopted a draft document, "Establishment, Organization, and Operation of Divisions", which provides general guidance for the operation of the divisions. By the end of 1977, eight divisions and an Information Working Group had been authorized. The eight divisions are: Awareness, Education and Training; Consumer Affairs; Metric Practices and Preferred Units; Fuel and Power; Construction; Procurement and Supply; Transportation, and Legislation and Regulations. In addition, an Information Working Group serves as a support function for internal Subcommittee and Federal agency use. It is expected to be knowledgeable about activities within the divisions, but will not provide information directly to the public. The latter is the responsibility of the individual agencies.

During its four years of existence, the Subcommittee has established a coordinated framework around which Federal agencies can act. The Subcommittee has helped to raise the level of visibility of metric conversion, and it has encouraged agencies to build infrastructures to deal with metric conversion. The "Guidelines for Preparation of a Metrication Directive" drafted by the Subcommittee helped many agencies in drawing up their own metrication directives and policy statements (e.g., Department of Agriculture, Department of the Interior).

Following a recommendation by the Subcommittee in 1976 (which was approved by the ICSP), the Secretary of Commerce initiated the establishment, at the end of 1977, of a high-level Interagency Committee on Metric Policy (ICMP). In October 1978, the ICMP was established as an advisory vehicle to the U.S. Metric Board. The purpose of the ICMP is to coordinate and provide policy guidance regarding U.S. Executive Branch efforts to implement metric conversion and to serve as liaison with the U.S. Metric Board. As expected, the Subcommittee became the "operating" committee under the new ICMP. The ICMP operating charter is included as Appendix B to this Report.

During the first quarter of 1979, the ICMP prepared a draft Metric Conversion Policy for Federal agencies. After revision, the final version of the policy was submitted for approval and has subsequently been approved by 27 Federal agencies. A copy of this Metric Conversion Policy for Federal Agencies is included as Appendix C to this report.

As part of the basic research phase, contact was established with 55 states and territories to determine the status of metric planning within

the United States. A summary of this information (Exhibit D) shows that 13 states have had or currently have a metric planning or coordinating committee within the state organization. Most of the state Governors have appointed a senior representative to coordinate state metric conversion activities. These contacts range from representatives within the Governor's office to representatives within the Departments of Agriculture, Weights and Measures, or Education. One state, Florida, has developed a comprehensive metric conversion plan which was recently presented to the Governor and the state legislature. A second state, New York, has aggressively planned metric conversion activities over the past two years, and recently enacted metric legislation in the weights and measures areas.

#### D. LEGISLATIVE STATUS

Legislation at the Federal level addressing metric measurement units has been in existence for many years. In addition, state regulations recognizing the use of metric units have been enacted for over 50 years. It is helpful when reviewing the rest of this report to understand both the legislative background and the current legislative status regarding metric units. A summary of Federal legislative activities is presented in the following paragraphs.

- 1786 - A complete decimal system of coinage was adopted for the United States.
- 1788 - The U.S. Constitution was ratified, whereby the power "to fix the standard of weights and measures" was delegated to Congress. Secretary of State Thomas Jefferson submitted a report on weights and measures to Congress.
- 1799 - The first Federal weights and measures law was enacted. Known as the "Surveyor Act", it ordered an annual examination of the weights, measures, and instruments used in assessing customs duties.
- 1866 - Use of the metric system in the United States was made legal by Act of Congress.

Section 3569 of the Revised Statutes (15 U.S.C. §204) provides as follows:

It shall be lawful throughout the United States of America to employ the weights and measures of the metric system; and no contract or dealing, or pleading in any court, shall be deemed invalid or liable to objection because the weights and measures expressed or referred to therein are weights or measures of the metric system.

Section 3570 of the Revised Statutes (15 U.S.C. §205) provides as follows:

The tables in the schedule annexed shall be recognized in the construction of contracts and in all legal proceedings as

establishing, in terms of the weights and measures on June 22, 1874, in use in the United States, the equivalents of the weights and measures expressed therein in terms of the metric system; and the tables may lawfully be used for computing, determining, and expressing in customary weights and measures the weights and measures of the metric system.

The tables referred to have been augmented by announcements and tables published from time to time by the Department of Commerce and its agencies.

Other Acts were passed by Congress providing for each state to be furnished with a set of standard weights and measures of the metric system and providing for the distribution of metric balances to all post offices exchanging mail with foreign countries.

- 1875 - The Convention du Metre (Treaty of the Meter) was signed in Paris by 17 nations, including the United States. The result of several years' work, the Treaty provided for the fabrication of new and improved standards for metric weights and measures; the establishment and maintenance of a permanent International Bureau of Weights and Measures; and the creation of a General Conference as a permanent deliberative body to pass upon international weights and measures matters. Final U.S. approval of the Treaty was granted in 1878.
- 1889 - Fabrication of new international metric standards was completed in France. International prototypes were selected, and copies were distributed to nations that had signed the Treaty of the Meter. The U.S. received prototype meters No. 21 and No. 27 and prototype kilograms No. 4 and No. 20. In 1890, these standards were accepted in a formal ceremony at the White House by President Benjamin Harrison.
- 1968 - An Act providing for a three-year program to determine the impact of increasing use of the metric system on the United States was passed by Congress and signed into law by President Lyndon B. Johnson.
- 1974 - The Elementary and Secondary Education Amendments Act provided for a program of grants and contracts in order to encourage institutions of higher education, State and local education agencies, and other public and private nonprofit agencies, organizations, and institutions to prepare students to use the metric system. Over the past three years, the U.S. Office of Education has provided approximately \$6.3 million for metric education.
- 1975 - Congress enacted PL 94-168 (the Metric Conversion Act of 1975).

State legislative activities associated with metric conversion have ranged from initiatives directing statewide planning, to specialized legislation allowing the sale of gasoline by the liter, to attempts at comprehensive statewide legislation. A summary of the metric activities within the 50 states is shown in Exhibit E.

# AMERICAN NATIONAL METRIC COUNCIL

A private, nonprofit organization

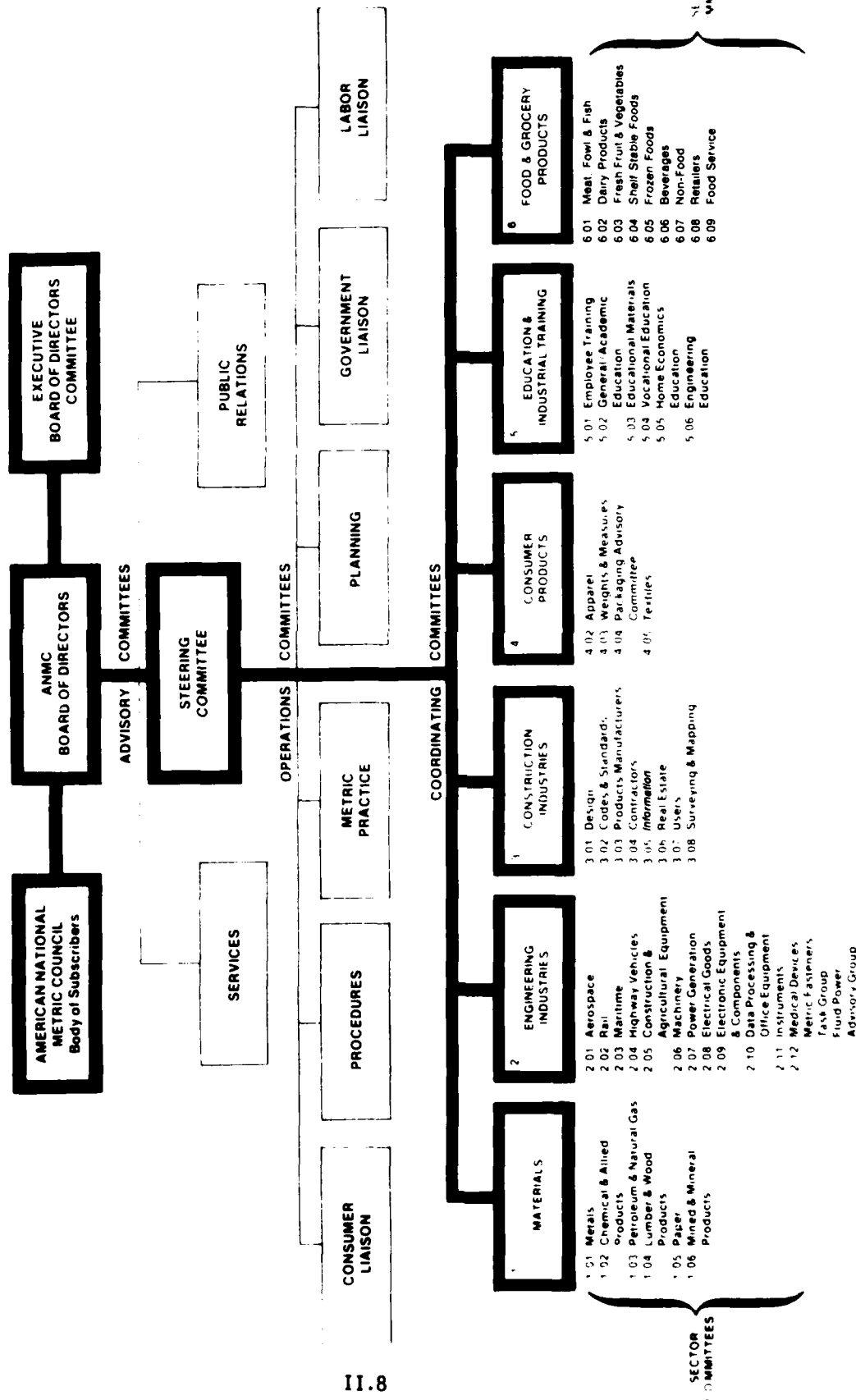


EXHIBIT A

ANMC, 1625 Massachusetts Avenue, NW, Washington, D.C. 20036 (202-232-4545)

(see reverse)

## Scope of ANMC Committees

Participation in all committees is encouraged, it is voluntary, costs are borne by the participants.

### Steering Committee

Subject to the policy supervision and direction of the Board of Directors and the Executive Committee, the Steering Committee provides guidance in overall coordination and planning among all coordinating and sector committees.

### Coordinating Committees

Managing bodies of the sector committees under their jurisdictions; encourage improvement of procedures, practices and committee operations; provide forum for the surfacing and resolution of intersector problems and conflicts.

### Sector Committees

The core of ANMC is its sector committees, which carry out the main function of the Council: planning and coordinating metric activities in the various sectors in the economy. These sector committees are grouped under six coordinating committees. They consolidate input from all segments of each sector (manufacturers, suppliers, labor, consumers, regulators, etc.) into a sector conversion plan which serves as guide and pattern for individual conversion decisions.

The secretariat function of the sector committees is served by a leading trade or professional association within the industry. Participants on each committee are designated by the various organizations and associations to represent the specific segments of the sector, but are drawn from membership rather than staff.

The sector committees draft the sector metric conversion plans and annual updates thereof. In the plan the sector committee *identifies and assigns* all tasks needed to be performed for the conversion of the sector. The sector committee does not perform most tasks, as such tasks are within the responsibilities of existing trade and professional organizations as part of their normal course of business. However, it *does monitor the performance of all tasks*. It acts as a catalyst within the sector of the economy. The performance of some tasks begins prior to the completion of the Sector Conversion Plan, i.e., Implementation begins before the plan is complete (e.g., selection of SI Units, conversion of documentation, standards, etc.)

### Operations Committees

Eight Operations Committees provide guidance for ANMC activities:

**Services Committee** recognizes and recommends means of fulfilling the needs of ANMC subscribers. It also provides guidance to the education and information programs developed by the Council.

**Public Relations Committee** is responsible for directing the publicity and public relations policy of the Council, through publications and the trade and public media.

**Consumer Liaison Committee** assures that the views of the consumer are represented in ANMC and provides means for consumer participation in both ANMC and the conversion process.

**Procedures Committee** provides legal advice to the Council on antitrust implications of industry-coordinated committee work. The committee has established guidelines for meeting agendas, minutes and representation.

**Metric Practice Committee** has the primary function of recommending needs and priorities for development of new or revision of existing standards for metric practice.

**Planning Committee** develops and monitors implementation of a self-sustaining planning methodology within ANMC.

**Government Liaison Committee** is responsible for establishing relations with the U.S. Metric Board and other governmental bodies involved in metric conversion.

**Labor Liaison Committee** assures that the views of labor are represented in ANMC and establishes constructive and cooperative relationship between labor and ANMC committees.

### ANMC Staff

A fulltime staff executes the day-to-day work of ANMC by: 1) organizing sector committee meetings and acting as liaison between sectors; 2) administering the Council's subscription programs; and, 3) providing an information program as a service to subscribers.

EXHIBIT B

MATERIALS SECTOR CONVERSION TARGETS\*

A. METALS SECTOR

. Flat Rolled & Bar Steel	Now
. Flat Rolled & Bar Aluminum	Now
. Hot Rolled	1983
. Tubing	1986
. Structural Shapes	1988

B. CHEMICALS SECTOR

. Shipping & Billing Ind. Chemicals	1981
. Predominantly Metric	1984
. DuPont-Neoprene to 25kg Bags	1973
. Allied Chemicals Polyethylene to 25kg Bags (Selling, Invoicing, Shipping)	1978

C. PETROLEUM SECTOR

. Retail Gasoline Conversion	1979-1982**
------------------------------	-------------

D. PAPER AND ALLIED PRODUCTS SECTOR

. Newsprint Industry to Metric	1979
--------------------------------	------

\* Source is predominately ANMC sector plans

\*\* Based on conversion plan adopted July 1979 by National Conference of Weights and Measures

ENGINEERING INDUSTRIES SECTOR CONVERSION TARGETS\*

A. HIGHWAY VEHICLES SECTOR

- |                                      |             |      |
|--------------------------------------|-------------|------|
| . GM Automobiles                     | 85% Metric  | 1979 |
|                                      | 100% Metric | 1982 |
| . Chrysler (Omni-Horizon All Metric) |             | 1979 |
| . Ford (Pinto, Fiesta)               |             | 1979 |

B. CONSTRUCTION AND AGRICULTURAL EQUIPMENT SECTOR

- |   |           |
|---|-----------|
| . Allis Chalmers, Caterpillar Tractor Co.,<br>International Harvester Co. and Others<br>Designing and Manufacturing in Metric | 1976-1980 |
|---|-----------|

C. POWER GENERATION SECTOR

- |   |      |
|---|------|
| . One U.S. utility has purchased metric<br>generating equipment | 1978 |
|---|------|

D. ELECTRICAL GOODS SECTOR

- |                                   |      |
|-----------------------------------|------|
| . Planned Consensus on Metric Use | 1980 |
| . Planned Conversion of Standards | 1984 |

\* Source is predominately ANMC sector plans

EXHIBIT B-CONT.

CONSTRUCTION INDUSTRIES SECTOR TARGETS\*

A. DESIGN SECTOR	1983-1986
B. CODES & STANDARDS SECTOR	1981-1986
C. PRODUCTS MANUFACTURES SECTOR	1984-1987
D. CONTRACTORS SECTOR	1985-1987
E. REAL ESTATE SECTOR	1983-1987
F. USERS SECTOR	1984-1987
G. SURVEYING AND MAPPING SECTOR	1982-1986

\* Source is predominately ANMC sector plans



## SUMMARY OF FEDERAL AGENCY POLICIES

<u>Agency</u>	<u>Metric Policies</u>
Department of Agriculture	Admin Regulations, Amendment 1, Title 1, Chapter 14, Section 1 (9/27/77)
Department of Commerce	Draft in process
Department of Defense	NAVPAC Instruction 4120 (1/25/79) DLA Regulation 4120.10 (5/25/77) DLA Regulation 4120.10 (7/1/77) DOD Directive 4120.18 (12/10/76)
Department of Energy	Advisory Committee
Department of Health, Education, and Welfare	H.R. 15, Education Amendments of 1978 to PL 93-380
Department of Housing and Urban Development	
Department of Interior	Departmental Manual Release No. 2056 - 1/19/78 - 758 DM 1-3
Department of Justice	
Department of Labor	
Department of State	
Department of Transportation	DOT Order 1020.1A (July 1977)
Department of Treasury	
Central Intelligence Agency	Classified Plan

## SUMMARY OF FEDERAL AGENCY POLICIES

<u>Agency</u>	<u>Metric Policies</u>
Civil Aeronautics Board	Policy under development
Commission of Fine Arts	
Commodity Futures Trading Commission	Policy under study
Community Services Administration	Sent copy of letter dated 9/9/77 to DOC
Congress, U.S., Office of Technology Assessment	Policy under development
Consumer Product Safety Commission	Policy under development
Environmental Protection Agency	Draft Order 1000. (7/10/78)
Export-Import Bank	"Not appropriate to Agency"
Federal Maritime Commission	Report on Metrication of Freight Tariffs (3/78) (No Policy)
Federal Reserve System, Board of Governors of	Policy under development
Federal Trade Commission	

## SUMMARY OF FEDERAL AGENCIES POLICIES

<u>Agency</u>	<u>Metric Policies</u>
General Accounting Office	
General Services Admin, Federal Supply Service	Statement (11/8/76)
Government Printing Office	Policy statement in development
International Trade Commission	
Interstate Commerce Commission	ICC Notice (7/2/76)
Library of Congress	Preliminary Draft
National Aeronautics and Space Administration	NASA Notice NN 8010 (2/2/78) Policy Directive 2220.4 (9/14/70)
Postal Service, U.S.	Headquarters Circular No. 77-7 (3/30/77) Metrication Policy
Small Business Administratio	Policy in development
Smithsonian Institution	Office Memo 795 (12/27/77)
Tennessee Valley Authority	Internal Memo of 5/25/76
Veterans Administration	Memo 00-76-14 (9/13/76) Circular 00-77-18 (5/2/77)

STATES WITH METRIC PLANNING COMMITTEES

California

Ms. Barbara J. Bloch  
Manager, Metric Conversion Council  
Division of Measurement Standards  
Department of Food and Agriculture  
8500 Fruitridge Road  
Sacramento, CA 95826

Established by State Legislation September 7, 1977

Colorado

Mr. John Gerhardt  
Weights and Measures  
Colorado Department of Agriculture  
1525 Sherman Street  
Denver, CO 80203

Established by Executive Order December 15, 1978

Connecticut

Ms. Mary M. Heslin  
Commissioner of Consumer Protection  
State Office Building  
Hartford, CT 06115

Established by Executive Order November, 1976

Florida

Mr. Sydney D. Andrews  
Florida Department of Agriculture and  
Conservation Service  
Mayo Building - Lab Complex  
Tallahassee, FL 32304

Established by State Legislation January 20, 1975

Georgia

Mr. R. C. Collier  
Metric Coordinator  
Lockheed-Georgia Company  
Marietta, GA 30063

Volunteer group not established by official state action

STATES WITH METRIC PLANNING COMMITTEES

Hawaii

Mr. George C. Mattimoe  
State Deputy Director of Measurement  
Standards  
Hawaii Department of Agriculture  
1428 South King Street  
Honolulu, HI 96814

Established by Executive Order July, 1976

Maine

Mr. Arnold Johnson  
Department of Educational and Cultural  
Services  
State Office Building  
Augusta, ME 04331

Established by Executive Order September 24, 1976

Minnesota

Mr. David L. Dye  
Specialist, Mathematics Education  
643 Capitol Square Building  
550 Cedar Street  
St. Paul, MN 55101

Established by Legislation, 1974

New York

Mr. John J. Bartfai  
Director, Bureau of Weights and Measures  
Department of Agriculture and Markets  
1220 Washington Avenue, Building 7-A  
Albany, NY 12235

Established by Executive Order August, 1976

South Carolina

Mr. Ralph Magoffin  
South Carolina Department of Agriculture  
P.O. Box 11280  
Columbia, SC 29211

Established by State Legislation June 27, 1977

STATES WITH METRIC PLANNING COMMITTEES

Tennessee

Mr. Robert M. Reeves  
Director, Food and Drug Division  
Tennessee Department of Agriculture  
Ellington Agricultural Center  
Box 40627, Melrose Station  
Nashville, TN 37204

Established by Executive Order February 22, 1977

Texas

Mr. Charles E. Forester  
Texas Agricultural Department  
Austin, TX 78711

Established by State Legislation May, 1977

Vermont

Mr. John E. Holmberg  
Vermont Metric Coordinator  
State Planning Office  
Office of the Governor  
Montpelier, VT 05602

Established by Executive Order September, 1977

## STATUS OF METRIC ACTIVITIES IN THE STATES

STATES	NATURE OF LEGISLATIVE/EXECUTIVE ACTION				
	Authorized* SI law NBS	Directed Metric Planning	Changed Laws to Allow Metric	Established A Planning Body	Draft of Statewide Legislation
California	X	X	Gasoline	X	
Colorado	X	X		By Executive Order	
Connecticut	X			By Executive Order	
Florida	X	X		X	X
Hawaii	X		X	By Executive Order	
Louisiana	X		Land & Alcohol Taxes		
Maryland	X		Liter Bottles & Alcohol Taxes		
Minnesota	X	X			
Montana	X		Commodities		
Nebraska	X				
New York	X		X	By Executive Order	
North Carolina	X		Alcohol Control		
North Dakota	X	X	Soft Conver- sion		
South Carolina	X	X		X	
Texas	X	X		X	
Vermont	X			By Executive Order	
Wisconsin	X				X

\* All 50 states have adopted NBS Handbook 44 or its equivalent.

### III. LEGISLATIVE AND REGULATORY ENVIRONMENT

Over the past two hundred years the United States has evolved a very complex, multi-level form of government. The laws and regulations which are an inherent part of this government form a hierarchical legislative and regulatory structure. This section of the report describes the U.S. legislative structure and establishes a framework for considering the alternative change mechanisms which are described in later chapters.

#### A. THE U.S. LEGISLATIVE STRUCTURE

The U.S. legislative structure emanates from the powers defined by the the Constitution of the United States and the constitutions of individual states. Additional elements of the U.S. legislative structure include Federal statutes, state statutes, and municipal ordinances. In addition, an extensive array of regulations has been developed at the Federal level, and many state rules have been developed within the state structures. A chart showing the interaction of the various elements in the legislative and regulatory structure is presented in Exhibit F. Each of the elements within this structure has a definite impact on the various sectors of U.S. society; and each of the elements contains measurement units of the customary system to define such things as tax rates, standards, and limits. Thus, a study of the impact of metric change on legislative and regulatory materials must examine each of the elements within this structure.

#### B. FEDERAL LAWS AND REGULATIONS

The laws that Congress enacts are codified and organized for general use in the United States Code. The U.S. Code is structured in 50 titles that originally tended to address individual topics or sectors of the economy. (Table 1 illustrates the 50 titles of the U.S. Code.) Over the years, as the complexities of industry and government grew, the content of individual titles within the U.S. Code also expanded. For the most part, each code title now addresses a multitude of industries, and is in turn administered or regulated by a number of Federal agencies.

Every Federal agency generates appropriate regulations and rules governing the particular industries or subjects for which they have responsibility. These rules and regulations are codified in 50 titles under the Code of Federal Regulations (CFR). While some similarities exist between the structure of the CFRs and the U.S. Code, they are not organized on a one-to-one basis. Table 2 illustrates the structure of the CFRs at the Federal level. The legislative and regulatory process at the Federal level is well defined and operates in a routine manner to provide for changes in both legislation and regulations.



### C. STATE STATUTES AND RULES

The legislative process in each of the 50 states is quite similar to the Federal process. One important difference, however, is that many states limit their legislatures to enacting laws which operate uniformly throughout the whole area of the state. The legislatures enact statutes dealing with a variety of topics, which are in turn codified for general usage. The state administrative agencies then issue rules and regulations addressing specific aspects of various activities.

The fact that each of the 50 states operates autonomously has created pressures for mechanisms to achieve uniformity in certain types of laws, particularly those dealing with commerce, consumer products, and transportation. In an attempt to create this uniformity without Federal intervention and preemptive legislation, groups have organized to independently develop and promulgate model state laws.

The National Conference of Commissioners on Uniform State Laws in Chicago, Illinois, is an organization whose objective is to promote uniformity in the law among those states where uniformity is desirable and practicable. Each of the states appoints members to the NCCUSL. The Conference has drafted over 200 uniform laws on various subjects since it was organized in 1892. Once these legislative models are drafted, the states may adopt them, modify them, or choose not to adopt them. The range of subjects covered by NCCUSL model laws over the past years includes such things as commercial codes, divorce laws, gifts to minors, limited partnerships, and many others. The achievement of uniformity among the 50 states is unpredictable, and the relative success of the Conference follows no pattern. In some cases, uniform acts have never been adopted by more than a handful of states; in other cases, over a period of 10 or 12 years practically all of the states have adopted a particular version of a uniform act.

Other groups have promulgated model state laws that focus on individual subjects or issues. Such organizations include the National Conference on Weights and Measures, which promulgates model state codes and model regulations dealing with weights and measures, and the National Committee on Uniform Traffic Laws and Ordinances, which promulgates the uniform vehicle code for states and model traffic ordinances for municipalities.

In an attempt to achieve uniformity in building codes that are adopted by individual municipalities and states, four different organizations have been created throughout the country. They each develop standardized building codes which may then be adopted or modified by an individual municipality or state. While these agencies have been quite successful in achieving a degree of uniformity in certain areas, at this time only 22 states have adopted statewide building codes. Thus, individual municipalities and states have a variety of standards and codes.

#### D. STATE BOARDS AND LICENSING BUREAUS

Most states have established a variety of state boards and licensing bureaus to control professional practitioners and to prevent consumer deception. Often these boards achieve the desired level of control through the establishment of licensing examinations and certification practices. Typically these examinations must, of necessity, address certain measurement issues inherent in the occupation being practiced. Each state is quite different in its approach to these licensing practices, although many professional societies have attempted to promote uniformity among the states by developing standardized examination questions or certification techniques.

#### E. LOCAL ORDINANCES

Each unit of local government is, in effect, a creation of the state; and its rights and powers are derived from state law, either constitutionally or statutorily. Typically, organizational entities such as counties and townships are quasi-municipalities that function largely as administrative subdivisions of the states. Municipal corporations are created under the authority of state law by local residents to provide services. Typically, these take the form of cities, towns, or villages. Many of the states have established home rule principles under the constitution of the state or via legislative enactment. Under the home rule concept, many powers are left to the individual municipalities within the state. Thus, in a home rule state, the ability of the state to directly influence municipalities to accept new measurement units into ordinances may be challenged under the home rule concept.

Municipalities typically enact ordinances and may in some cases establish rules and regulations interpreting these ordinances in a process that is similar to the legislative process at the state level. Such procedures may involve city councils, county boards, mayors, city managers, or other officials. Depending on the nature of the municipality, statutes may exist in very informal books bound chronologically, or they may be codified and organized by subject for the general use of the public. A representative municipal code list of topics is shown in Table 3.

# LEGISLATIVE AND REGULATORY STRUCTURE OF THE UNITED STATES

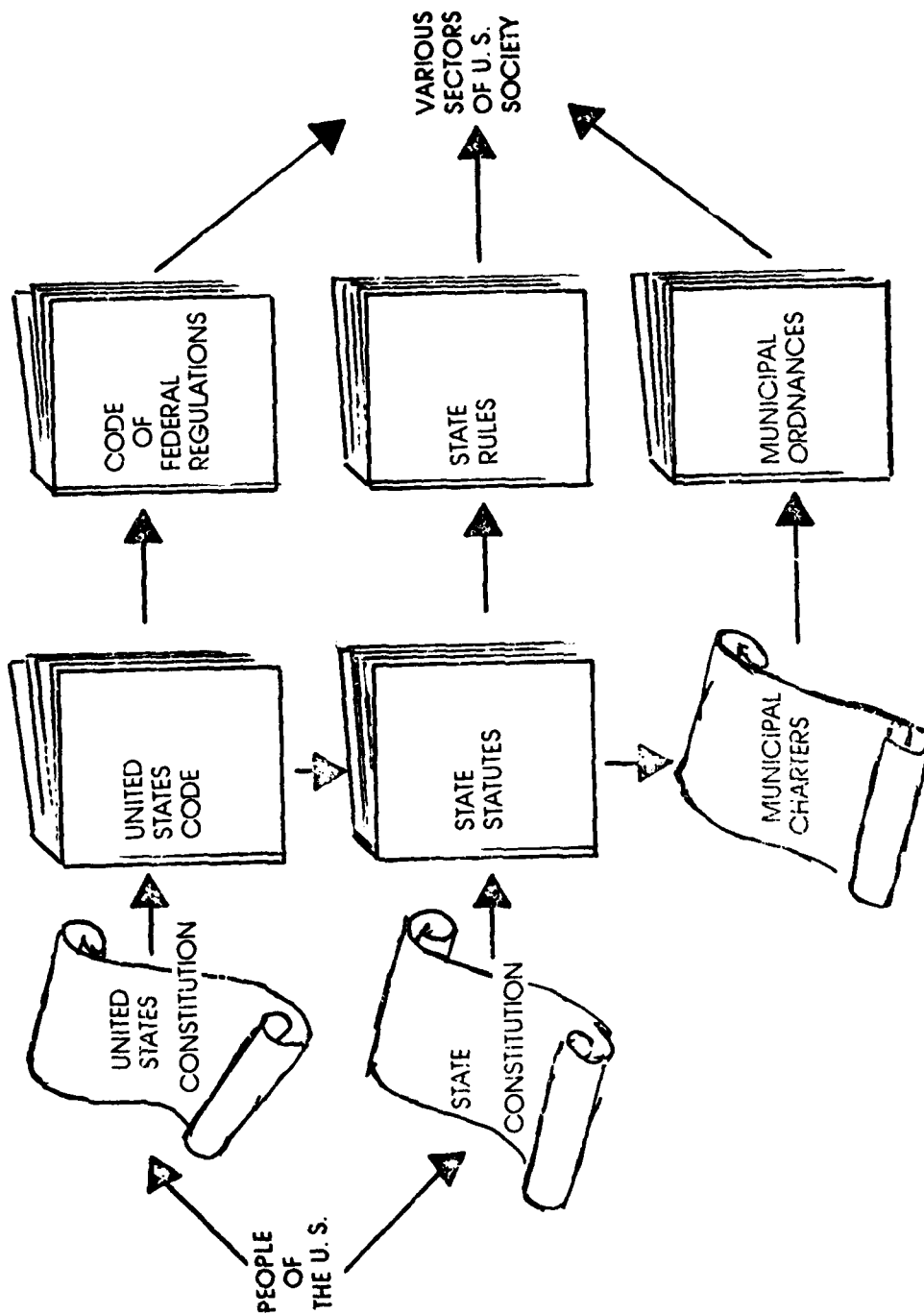


TABLE 1

UNITED STATES CODE TITLES

02 - The Congress	31 - Money & Finance
05 - Govt Org. & Employees	33 - Navigation and Navigable Waters
07 - Agriculture	35 - Patents
08 - Aliens and Nationality	37 - Pay & Allowances of the Uniformed Services
10 - Armed Forces	38 - Veterans Benefits
11 - Bankruptcy	39 - Postal Service
12 - Banks and Banking	40 - Public Buildings, Property, and Works
15 - Commerce & Trade	41 - Public Contracts
16 - Conservation	42 - The Public Health & Welfare
18 - Crimes and Criminal Procedure	43 - Public Lands
19 - Custom Duties	45 - Railroads
20 - Education	46 - Shipping
21 - Food and Drugs	47 - Telegraphs, Telephones, and Radiotelegraphs
22 - Foreign Relations and Intercourse	48 - Territories and Insular Possessions
23 - Highways	49 - Transportation
25 - Indians	50 - War & National Defense
26 - Internal Revenue Code	
27 - Intoxicating Liquors	
28 - Judiciary & Judicial Procedure	
29 - Labor	
30 - Mineral Lands & Mining	

TABLE 2

CODE OF FEDERAL REGULATIONS - TITLES

- |   |  |
|---|--|
| 1 - General Provisions                            | 26 - Internal Revenue                            |
| 2 - (Reserved)                                    | 27 - Alcohol, Tobacco Products,<br>and Firearms  |
| 3 - The President                                 | 28 - Judicial Administration                     |
| 4 - Accounts                                      | 29 - Labor                                       |
| 5 - Administrative Personnel                      | 30 - Mineral Resources                           |
| 6 - Economic Stabilization                        | 31 - Money and Finance: Treasury                 |
| 7 - Agriculture                                   | 32 - National Defense                            |
| 8 - Aliens and Nationality                        | 32A- National Defense, Appendix                  |
| 9 - Animals and Animal Products                   | 33 - Navigation and Navigable Waters             |
| 10 - Energy                                       | 34 - Government Management                       |
| 11 - Federal Elections                            | 35 - Panama Canal                                |
| 12 - Banks and Banking                            | 36 - Parks, Forests, and Public<br>Property      |
| 13 - Business Credit and Assistance               | 37 - Patents, Trademarks, and<br>Copyrights      |
| 14 - Aeronautics and Space                        | 38 - Pensions, Bonuses, and<br>Veterans' Relief  |
| 15 - Commerce and Foreign Trade                   | 39 - Postal Service                              |
| 16 - Commercial Practices                         | 40 - Protection of Environment                   |
| 17 - Commodity and Securities Exchanges           | 41 - Public Contracts and Property<br>Management |
| 18 - Conservation of Power and<br>Water Resources | 42 - Public Health                               |
| 19 - Customs Duties                               | 43 - Public Lands: Interior                      |
| 20 - Employees' Benefits                          | 44 - (Reserved)                                  |
| 21 - Food and Drugs                               | 45 - Public Welfare                              |
| 22 - Foreign Relations                            | 46 - Shipping                                    |
| 23 - Highways                                     | 47 - Telecommunication                           |
| 24 - Housing and Urban Development                | 48 - (Reserved)                                  |
| 25 - Indians                                      | 49 - Transportation                              |
|   | 50 - Wildlife and Fisheries                      |

TABLE 3

## TYPICAL MUNICIPAL CODE TOPICS

1. General Provisions
2. Administration
3. Advertising
4. Alcoholic Beverages
5. Ambulances
6. Animals and Fowl
- 6<sup>1</sup>/<sub>2</sub>. Antique Dealers
7. Auctions and Auctioneers
8. Automotive Dealers and Auto Wreckers
9. Aviation
10. Buildings
- 10<sup>1</sup>/<sub>2</sub>. Burglar and Fire Alarm Protection Services
11. Civic Center
- 11<sup>1</sup>/<sub>2</sub>. Civil Defense
12. Civil Service
- 12<sup>1</sup>/<sub>2</sub>. Common Markets
13. Contracts for Public Improvements and Maintenance
14. Convalescent Homes
15. Courts
- 15<sup>1</sup>/<sub>2</sub>. Discrimination
16. Elections
17. Fire Code
18. Fire Department; Hazardous and Dangerous Buildings
19. Food and Drugs
20. Garbage and Trash

TABLE 3 - cont.

21. Health
22. Itinerant Vendors
23. Junk Dealers, Scrap Metal Processors and Second-hand Dealers
24. Lake Houston
25. Libraries
26. Magnolia Park Gas System
27. Massage Establishments
- 27<sup>1</sup>/<sub>2</sub>. Mini-Warehouses
28. Miscellaneous Offenses and Provisions
29. Noise
30. Oil and Gas Wells
31. Parks and Recreation
- 31<sup>1</sup>/<sub>2</sub>. Pawnbrokers (Insofar as They Engage in the Buying, Selling, and Trading of Used Goods Other Than Pledged Goods)
32. Pest Control Operators
- 32<sup>1</sup>/<sub>2</sub>. Photographers
33. Planning
34. Police
35. Prisoners
36. Public Amusements
37. Public Charities and Trusts
38. Public Utilities (Privately Owned)
39. Railroads
40. School Vehicles
- 40<sup>1</sup>/<sub>2</sub>. Sightseeing and Charter Services: Chauffeured Limousine Services
41. Streets and Sidewalks
42. Subdivisions
43. Suburban Buses

TABLE 3 - cont.

- 44. Taxation
- 45. Taxicabs
- 46. Traffic
- 47. Mobile Home Code
- 48. Vital Statistics
- 49. Water and Sewers



#### IV. METRIC CONVERSION REQUIRES EFFECTIVE CHANGE MECHANISMS

A fundamental question to be addressed by this study is: does a need exist for an effective change mechanism that will accommodate metric conversion at all levels of government? In analyzing the issue of need, MRC developed specific criteria for determining need. These criteria were based on the nature of imbedded customary units and the interactions between metric measurement units and existing laws and regulations. In the paragraphs that follow, these criteria are defined, the nature of imbedded measurement units in laws and regulations is analyzed, and a conclusion regarding the "need" is presented.

##### A. CRITERIA FOR DETERMINING THE NEED

Throughout the past eight years, much has been said regarding the extent to which laws and regulations deter or prohibit the use of metric units. Many industry authorities have claimed that the existence of Federal or state laws prohibits them from using metric measurement units or metric sizes. These laws have often been cited as causing delays in the voluntary conversion process. In determining the criteria for evaluating the need issue, these examples were taken into account. Three criteria were identified as being relevant to need determination. These criteria are as follows:

- Legal Barriers: A legal barrier exists when a law or regulation prohibits the use of metric units or metric sizes.

Example: "All retail gasoline sales shall be in units of gallons or tenths of a gallon and such sales shall not be in other units such as liters or quarts".

- Legal Deterrents: A legal deterrent exists when a law or regulation makes it costly, cumbersome, or difficult to use metric units or metric sizes.

Example: "All retailers, distributors and wholesalers shall report monthly the volume of gasoline products sold. Such report shall indicate volume in gallon and tax due calculated at 8.3 cents per gallon".

- Legal Nuisances: A legal nuisance exists when a law or regulation hampers the use of metric units or metric sizes.

Example: "Any person selling at retail to the general public, any gasoline or other motor vehicle fuel from any place of business in this state, showing the actual total price per liter, shall, in addition, display in a conspicuous fashion in full view of the retail purchaser a gallon-to-liter conversion table showing quantity and price equivalents."

The establishment of these varying degrees of legal involvement (barriers, deterrents, and nuisances) was used to analyze existing codes at all levels of government. Clearly, if an extensive number of legal barriers existed, they would constitute an overall need for a formalized mechanism. If, on the other hand, research showed that only legal nuisances exist, there would probably not be a need for an effective change mechanism. In between these two extremes the need would be determined by the exact nature of the legal involvement identified in the research.

#### B. THE NATURE OF EMBEDDED MEASUREMENT UNITS

The analysis shows that there are extensive references to existing customary measurement units throughout Federal, state, and municipal laws and regulations. Computer searches of representative laws have provided an indication of the magnitude of these references. For example, there are approximately 6,700 references to customary measurement units in the United States Code. In various state laws the number of references to customary units ranges from 1,000 to 3,000 citations. The nature of these measurement references varies from general references, using terms such as mileage or acreage; to very specific uses for defining tax rates, such as 15 cents per gallon; to the establishment of safety limits, such as 55 miles per hour. Since the context or use of the measurement unit would determine the extent to which it is a legal barrier or deterrent, the use of each term was tabulated according to six standardized categories. These are defined as follows:

- . General: Use of the term is in a non-measurement sense, such as the use of acreage as an identifier of "area of land" with no quantification. Use of the term as an unquantified but quantifiable unit, such as "mileage allowance shall be similar to..."
- . Rate: In such usage the term is part of a fraction (usually the denominator), where it is a base reference unit for some other quantifiable unit, such as "cents per mile".
- . Tax: Such categorization is more specific than "Rate" in that it is the basis on which a tax, fee, payment or the like is levied; for example, \$2.00 per barrel or 25¢ per ton.
- . Standard: The particular word (or words) are a specific designation of a standard measurement quantity, such as "a container of 56 pounds".
- . Limit: Use of the term is to categorize quantities in terms of maxima and minima, such as "not less than seventy-five thousand acres", "over 40 feet in length".
- . Legal Description: Use of the unit as a legal description of a land area, such as Federal or state parks, state boundaries, and other descriptions.

Exhibit G shows a summary tabulation of the customary measurement unit references at various governmental levels using the six categories. In analyzing the nature of imbedded customary units, the categories defined as General and Legal Description will not have to be changed in order to accommodate metric units. All citations of a general use, such as mileage or acreage, which do not have a quantifiable numeric value associated with them need not be changed; although at some point in the future, general references might be changed as a matter of housekeeping. Legal descriptions of land need not be changed merely for historic purposes. At some point in the future, new surveys of land descriptions may be written using metric units; however, these will not impact all of the legal descriptions imbedded in Federal and state legislation.

Approximately 50% of the citations in the U.S. Code and representative state codes fall in the categories of general usage or legal descriptions of land. As Exhibit G shows, when these two categories are subtracted from the overall volume of citations, fewer citations need to be changed. For the most part, the remaining "legal deterrents" fall under the categories of tax rates, standards, and limits.

Many of the citations in the U.S. Code and state laws appear to be potential legal barriers and have often been reported as such by industry. However, closer examination revealed that while state Method of Sale laws, for example, may require the use of customary sizes, these same laws do not, per se, prohibit the use of metric units; nor is the legal intent to prohibit the use of metric sizes. Thus, it was felt by both the Legal Advisory Panel and MRC that none these laws could actually be used to prohibit the use of metric units. If tested in a court of law, they would most likely not be found to be legal barriers.

A large number of references at all levels of governmental law and regulations are, however, legal deterrents. That is, they provide cumbersome situations which make it difficult to incorporate metric sizes or metric units. Additionally, many legal nuisances exist at all levels of government. However, by themselves the legal nuisances do not constitute justification for a formalized change mechanism.

Our analysis of the existing measurement units was tabulated both by type of unit (e.g., mile, foot, or acre) and by industry grouping, so as to determine what areas of code contain most of the measurement units. These tabulations for the U.S. Code, representative state codes, and representative municipal codes, are shown in a series of charts labeled Exhibits H-1 through H-17 and Exhibits I-1 through I-9.

These charts show that in terms of customary units the most frequent terms, which account for 90% of the U.S. code citations, are:

. Feet (including foot, sq. foot, etc.)	970
. Mile(s)	1221

. Acre(s)	2436
. Pound(s)	269
. Inch(es)	147
. Gallon(s)	110
. Ton(s)	449

When analyzed by industry sectors or statute topics, a similar pattern exists. Thus, in the U.S. Code 90% of the citations are contained in the following ten sections of code:

. Title 16 - Conservation	2263
. Title 7 - Agriculture	1470
. Title 43 - Public Lands	595
. Title 33 - Navigation	478
. Title 46 - Shipping	439
. Title 26 - Revenue	262
. Title 30 - Minerals and Mining	256
. Title 15 - Commerce	141
. Title 23 - Highways	116
. Title 28 - Judicial	112

At the state level, the Mississippi Code shows major industry groupings of measurement units, as follows:

. State and local government	919
. Motor vehicle code	310
. Petroleum and natural gas	277
. Agriculture	175
. Dairy products	92
. Lumber products	92
. Rail industries	78

. Meat, fish and fowl	55
. Chemicals	55

At the municipal level, the Lewiston City Code shows the following usage by industry:

. Building codes, standards and zoning	191
. State and local government	149
. Advertising	65
. Surveying and mapping	35
. Motor vehicles	30
. Electrical goods	24
. Petroleum and natural gas	21

In addition to having measurement units imbedded in state statutes and regulations, all states have established licensing and examining boards or bureaus. These agencies, authorized by state legislation or regulation, establish the quality control requirements for certain professional groups within each state. A survey of these licensing and examining agencies was made by the State of California to determine the extent to which measurement units were imbedded in their application forms and licensing exams. Based on the results of this survey, MRC selected nine states and requested information on licensing boards and examinations. A tabulation of the results of this study indicates that measurement units are often used in these examinations. It is clear that if a sector such as construction industries chooses to use metric units, the licensing examinations for architects and engineers will have to be changed to reflect metric units in the examinations. This is only a representative example of this problem. Exhibit J at the end of this chapter summarizes the extent to which measurement units are involved in representative state licensing and examining boards or bureaus.

#### C. NO LEGAL BARRIERS EXIST

Our analysis of the nature of measurement units as they are imbedded in legislative and regulatory material indicates that legal barriers, as defined in Section A above, do not exist. However, there are many cases where measurement units imbedded in such material appear on the surface to present legal barriers to the use of metric units or to the introduction of metric sizes.

One example of this condition is the Fair Packaging and Labeling Act, PL 89-755 (15 USC 1451 and 16-CFR Part 500), which is viewed by many as a

barrier to the introduction of metric sized consumer products. This Federal law has also been enacted by various states; and, thus, a version of the Fair Packaging and Labeling Act exists not only at the Federal level, but also in many state laws. A detailed analysis of the Fair Packaging and Labeling Act indicates that it does not prevent the introduction of metric packages in consumer products. It does require that such packages, whether they be in even metric sizes (such as 500 g) or otherwise, be labeled both in customary units and in metric units. Thus, it is our opinion that the Fair Packaging and Labeling Act constitutes a legal deterrent in that it requires metric sized packages to be dual labeled, but it in no way prohibits or bars the introduction of metric products in the marketplace.

A second example of apparent legal barriers is in the Method of Sale laws enacted by many states. These laws originated as a means of protecting the consumer against pricing deception by standardizing the sizes of consumer products; typically, dairy products, meat products, and other basic food stuffs. The nature of these laws is to state that the sale of certain products will be in uniform sizes, such as pints, half-pints, quarts, or gallons.

While this appears to be a legal barrier to the introduction of metric sizes, the Legal Advisory Panel and other study advisors indicate that because these laws are moot on the issue of metric sizes, they do not prohibit the introduction of rational metric sizes in the market place. Thus, by virtue of not addressing the issue of metric sizes, these laws do not present legal barriers to the introduction of metric sizes. This opinion was recently verified when the U.S. Metric Board, through the National Bureau of Standards, conducted a telephone survey regarding the legality of selling gasoline by the liter in the states. The results of the survey indicated that only eight states considered the sale of gasoline by the liter to be potentially unlawful.

The intent of the original Method of Sale laws and uniform packaging and labeling laws was to prevent consumer deception in packaging and pricing. To a great extent, this issue has been overcome by the recent requirement for unit price labeling and posting of unit pricing data in stores. These requirements have made the original standardization implied by Method of Sale laws unnecessary.

The Legal Advisory Panel concluded that Method of Sale laws do not present legal barriers to the introduction of metric sizes, an opinion that is supported by the Department of Justice. At the ANMC convention in April, 1979, Mr. Ky P. Ewing, Jr., Deputy Assistant Attorney General, Antitrust Division, stated in response to a question that any state law which tended to limit the sizes of products available to consumers was considered anticompetitive by the Justice Department.

#### D. AN EFFECTIVE CHANGE MECHANISM IS NEEDED

While no legal barriers to metric units exist, the need for an effective change mechanism still exists. If the thousands of legal deterrents that exist at all levels of governmental law and regulations are left to be changed on an individual basis, they represent a significant potential impediment to the voluntary conversion program as defined by PL 94-168. Industry is encouraged to pursue metric conversion programs on a voluntary basis; consequently, how conversion is implemented will be determined by the particular costs and benefits associated with individual decisions. If these industry sectors are to pursue their programs unhampered, then an effective change mechanism must be established to remove legal deterrents as the sector conversion programs are initiated.

To achieve the benefits associated with many metric conversion programs, new rational sizes for products are essential. However, the uniformity of these new metric sized products will be difficult to achieve if industry must deal with individual state legislatures or municipalities. Further, without uniformity, many of the benefits will be difficult to achieve. If these legal deterrents are not removed on a coordinated basis, the voluntary sector programs will be hamstrung by the need to deal with thousands of legal deterrents in the U.S. Code, the CFR's, the laws and regulations of 50 states, and the ordinances of 90,000 municipalities on an individual basis. This would result in unreasonable delays and expenses as industry sectors deal with the many individual legal entities.

An example of the implications of the legal deterrent problem can be seen in the recent move to convert retail sale of gasoline to the liter. This change represents only one element of the petroleum industry and is not representative of an industry-wide metric conversion plan. However, as a result of this change retailers who convert to sale of gasoline by the liter (at the pumps) will be faced with a continuing requirement to report monthly sales statistics, taxes, and other data on a gallon basis to satisfy the laws in 50 states. This represents a burden on the retailer that the whole petroleum industry would be faced with should they desire to convert the whole industry (refiners, wholesalers, distributors and retailers) to the use of liters and other metric units. Other examples of these problems exist in many sectors of the economy.

A second example can be seen in the dairy industry. If a dairy chose to offer its products in metric sizes, it would have two alternatives regarding its approach to introducing these products.

Alternative #1 would be to obtain, in advance, the permission of the state Weight and Measures authorities as well as the Agriculture Products authorities to introduce the new sizes. This would entail submission of the proposed new product sizes to the state agencies with a request for permission to market these products. Considering the current confusion regarding the Method of Sale laws in most states, as well as the lack of understanding of metric conversion programs, it is difficult to predict the outcome of this approach.

However, one would anticipate a lengthy exchange of information, correspondence and discussion between the dairy firm and the state officials.

Alternative #2 would be for the firm to quietly introduce the new products in a fashion similar to the soft drink industry's introduction of 1 and 2 liter bottles. If they chose to emphasize marketing milk by the liter, they might also utilize a promotion campaign. Following the introduction of this new sized product, various reactions might be expected.

- . One response is that nobody would protest the new sizes and the firm would continue to market metric size products in the future.
- . An alternative response might be that a competitor would protest the new sizes as being unfair or in violation of the Method of Sale regulations in the state. This has recently happened in two Western states: one dealing with milk containers, and one dealing with bread packaging. Depending upon the attitude of the state authorities and interpretation of the specific laws, a lengthy administrative action and potential legal action could result. However, if the issue was taken to court and the sizes of metric products being sold were in fact reasonable and rational (for example even sizes of liters, multiples and half sizes), it is the opinion of the Legal Advisory Panel and others that the combined effect of the 1866 Federal laws legalizing the use of metric units and the Metric Conversion Act of 1975 would be to allow the firm to sell metric products.

Both of these examples illustrate situations that will be repeated over and over again by many industries in many states unless an effective change mechanism is implemented by the USMB. The delays and costs associated with changing the laws and regulations to remove deterrents on a case by case basis are inconsistent with the policy of the 1975 Act to facilitate voluntary conversion efforts.

Thus, it is our opinion that the combination of thousands of legal deterrents and the intent of the voluntary conversion program requires that an effective change mechanism be established and implemented by the U.S. Metric Board. To be effective, this mechanism must be responsive to the needs of the voluntary conversion programs adopted by various sectors of society. This responsiveness must provide for timely changes to the thousands of laws and regulations (at all levels of government) which must be modified to accommodate a sector conversion. The candidate change mechanisms are identified in Chapter V.



## EXHIBIT G

SUMMARY OF REPRESENTATIVE CITATIONS BY TYPE

<u>DOCUMENT</u>	<u>GEN</u>	<u>L.D.</u>	<u>RATE</u>	<u>TAX</u>	<u>STD</u>	<u>LIMIT</u>	<u>TOTAL</u>	<u>POTENTIAL DETERRENTS*</u>
U.S. CODE	2031	1722	389	143	750	1754	6789	3036
33 CFR (1)	51	827	2	0	30	762	1672	794
46 CFR (2)	769	0	46	0	154	3915	4884	4115
ASPR (3)	92	0	31	19	24	138	304	212
COLORADO-STATUES	536	176	100	34	162	1317	2325	2813
KANSAS-STATUES	713	N/A	62	41	1001	1073	2890	2177
KENTUCKY-STATUES	347	N/A	107	191	152	617	1414	1067
MONTANA-STATUES	258	10	70	29	67	1024	1549	1281
MISSISSIPPI-STATUES	477	353	84	129	114	1150	2307	1577
VIRGINIA-STATUES	313	163	84	122	142	1408	2229	1753
WEST VIRGINIA-STAT	273	22	65	20	158	901	1439	1144
LEWISTON, IDAHO ORDINANCES	19	4	51	1	43	445	563	540
NEWPORT NEWS, VA ORDINANCES	25	46	34	5	105	879	1094	1023
HOWARD COUNTY, MD ORDINANCES	71	52	8	0	51	431	613	490
SEMINOLE, COUNTY, FLA ORDINANCES	10	0	8	0	8	246	272	262

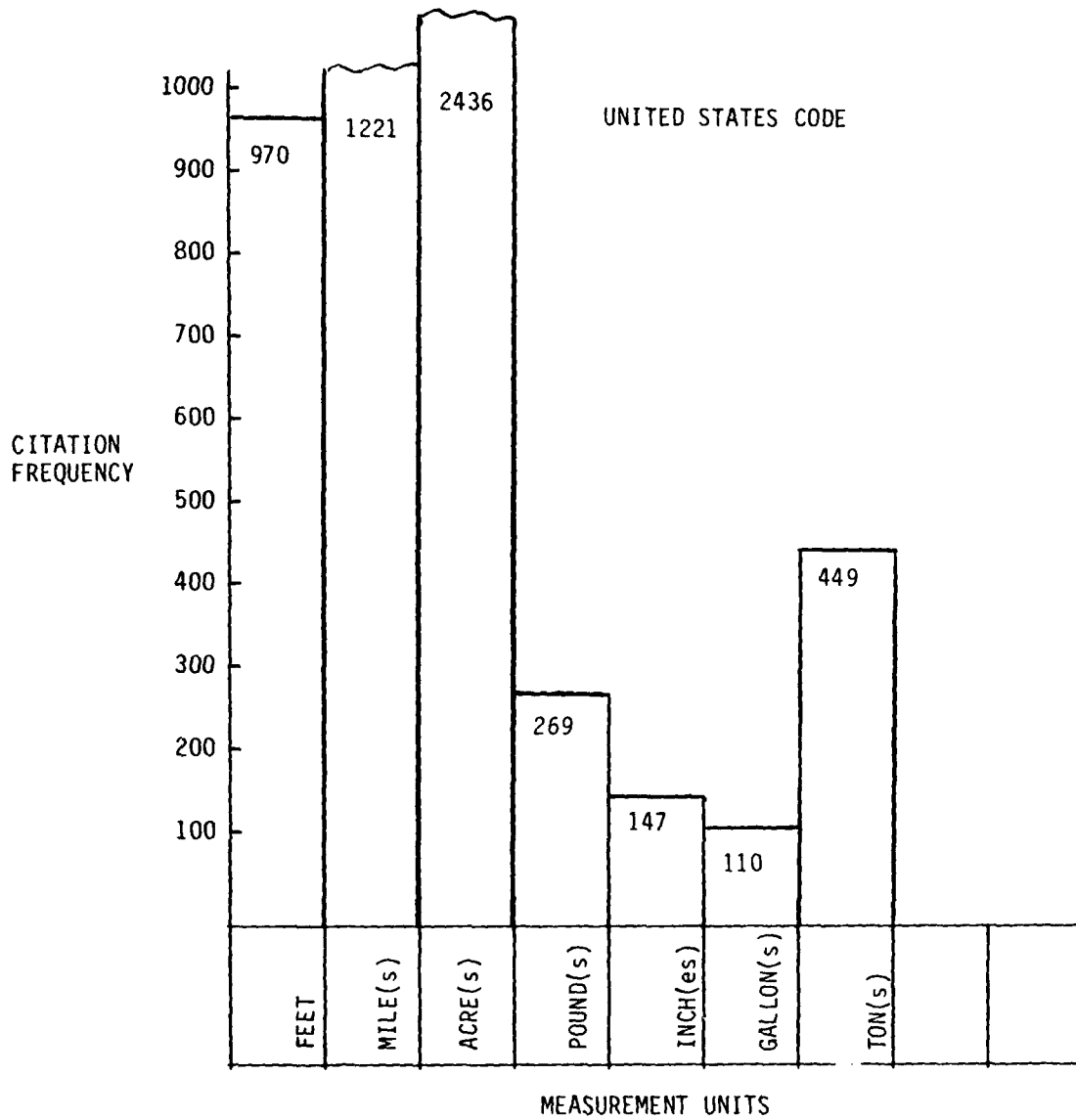
\* CALCULATED AS FOLLOWS:  
 DETERRENTS = TOTAL - (GEN + L.D.)

(1) 33 CFR - NAVIGATION AND NAVIGABLE WATERS

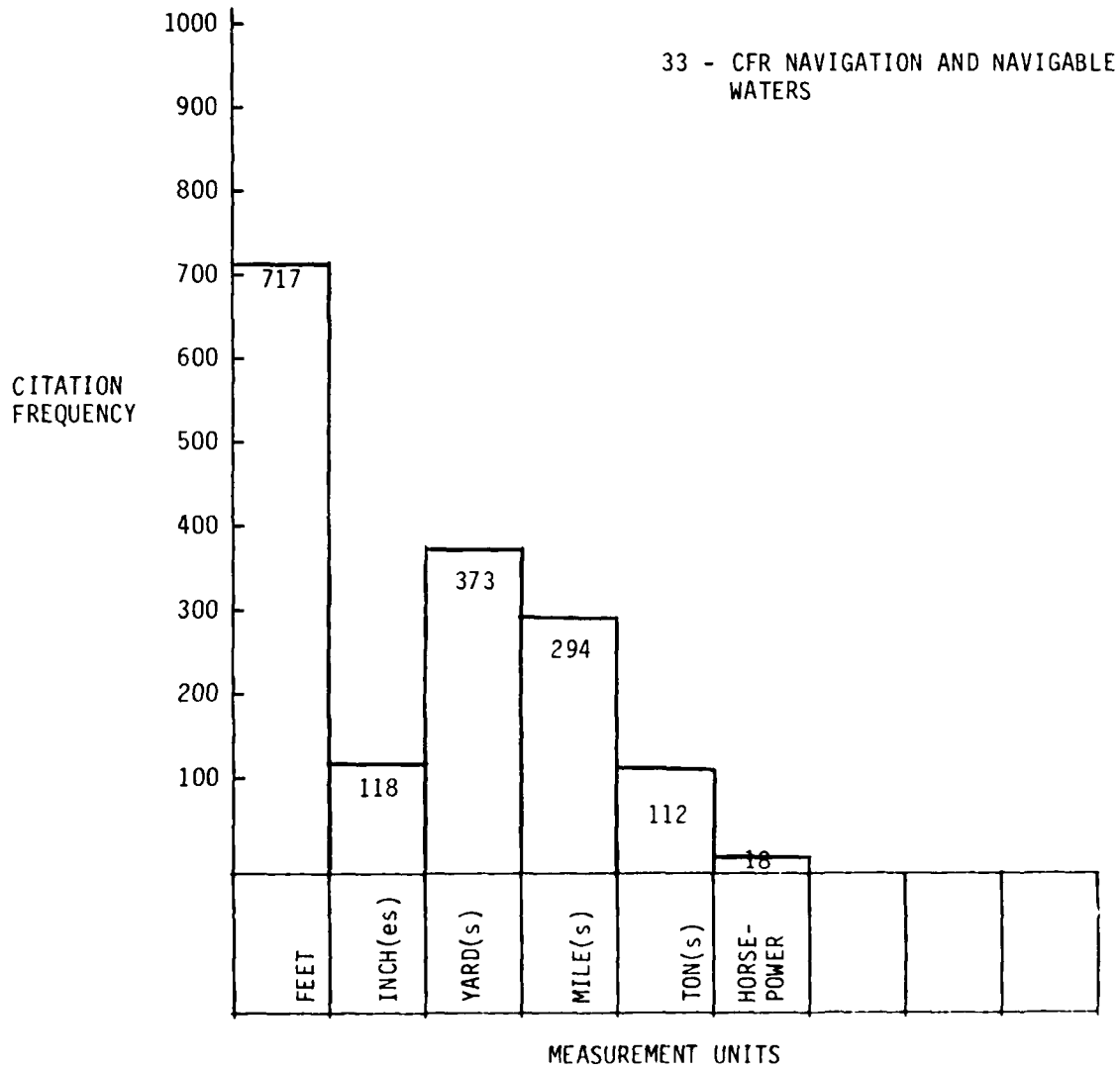
(2) 46 CFR - SHIPPING

(3) ARMED SERVICES PROCUREMENT REGULATIONS

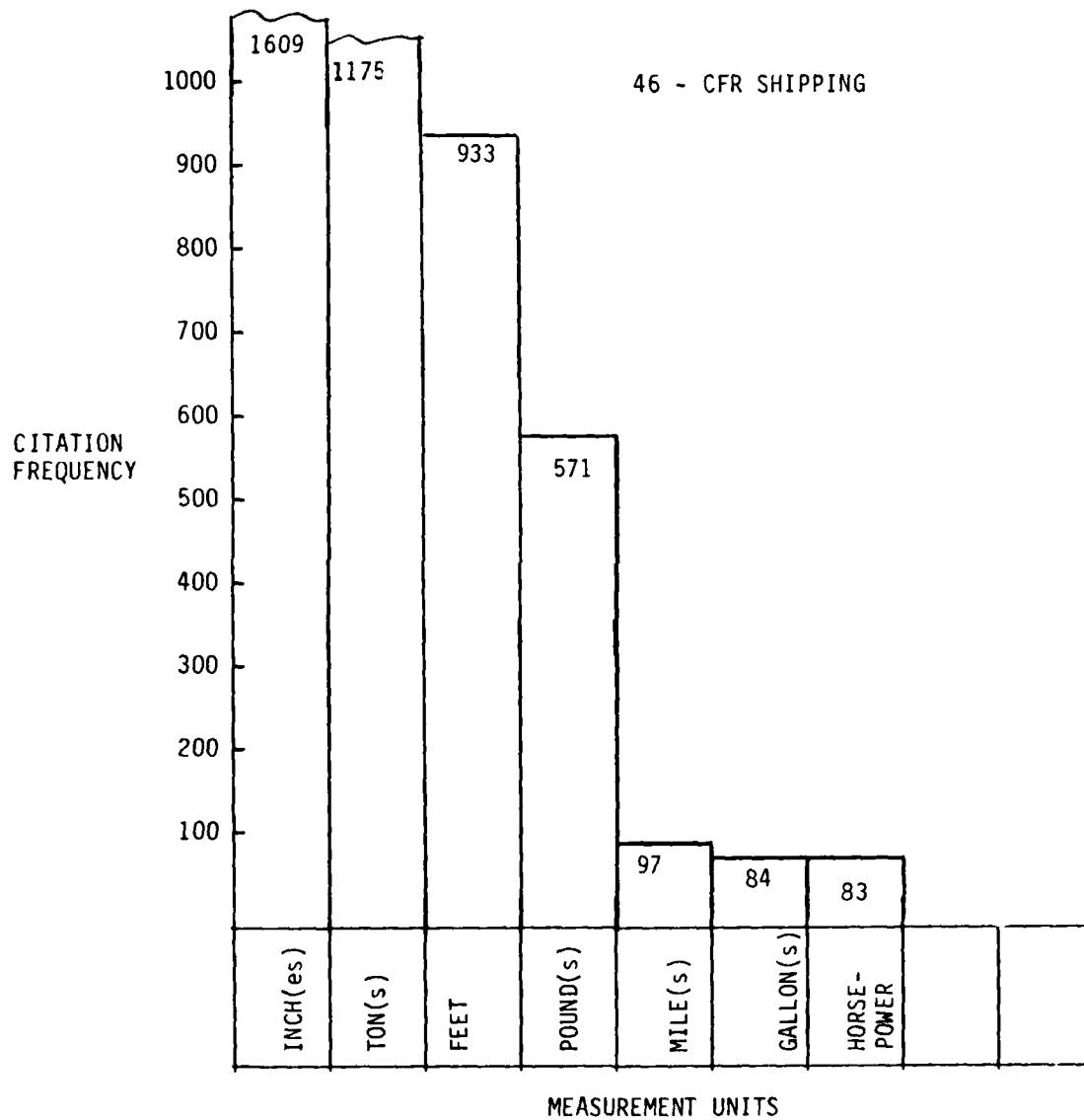
# EXHIBIT H-1



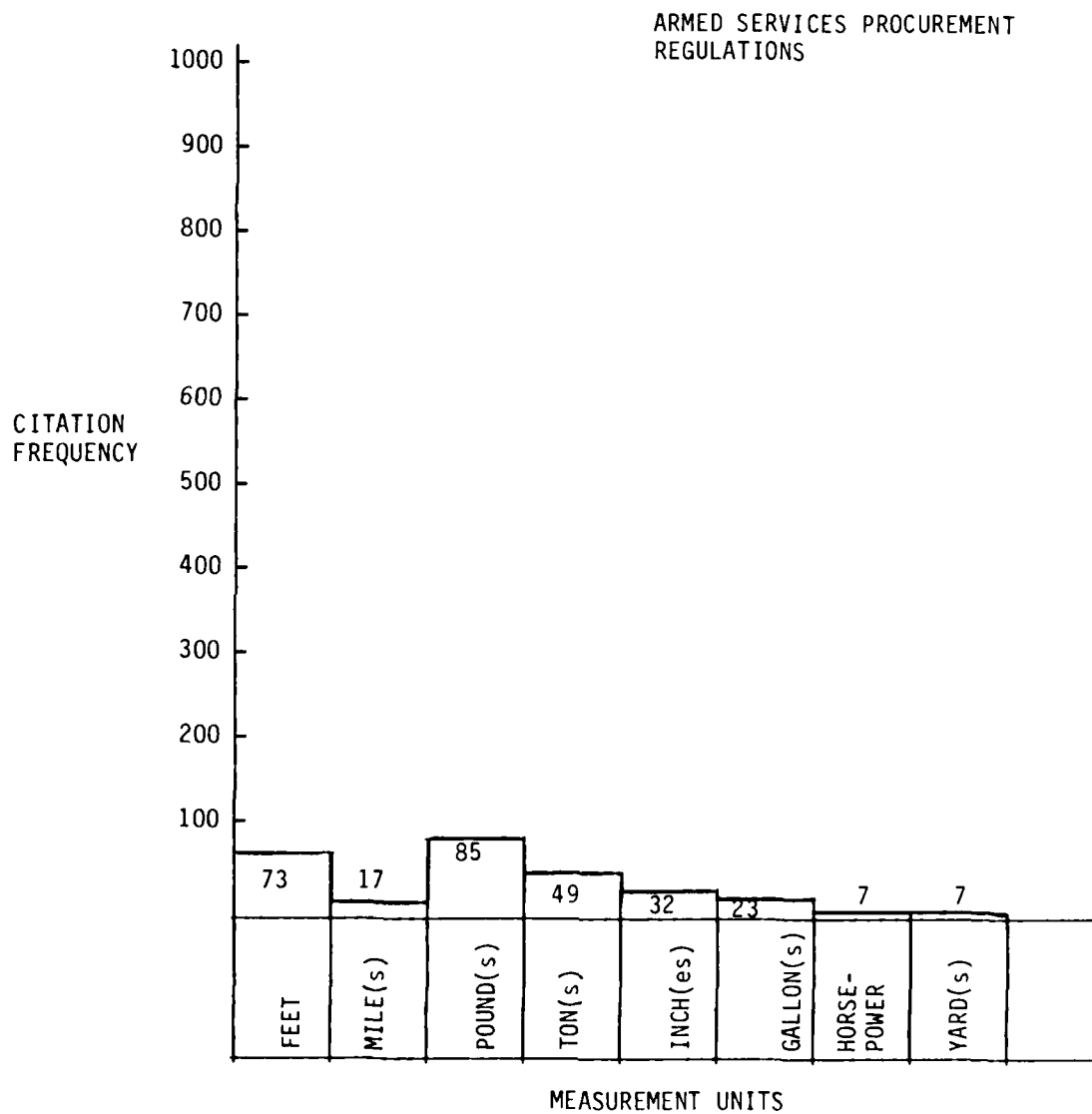
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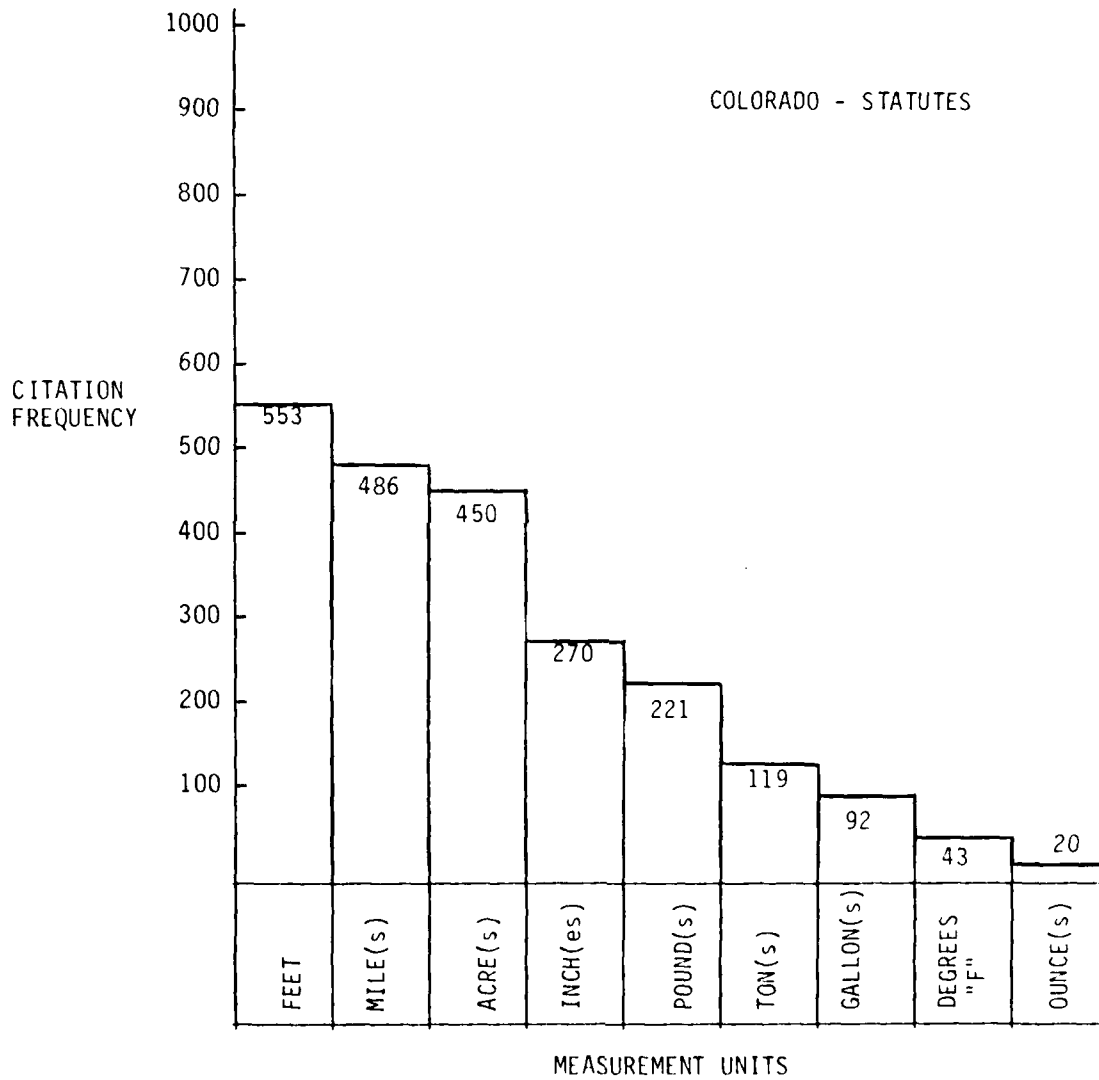
# EXHIBIT H-3



# EXHIBIT H-4



# EXHIBIT H-5



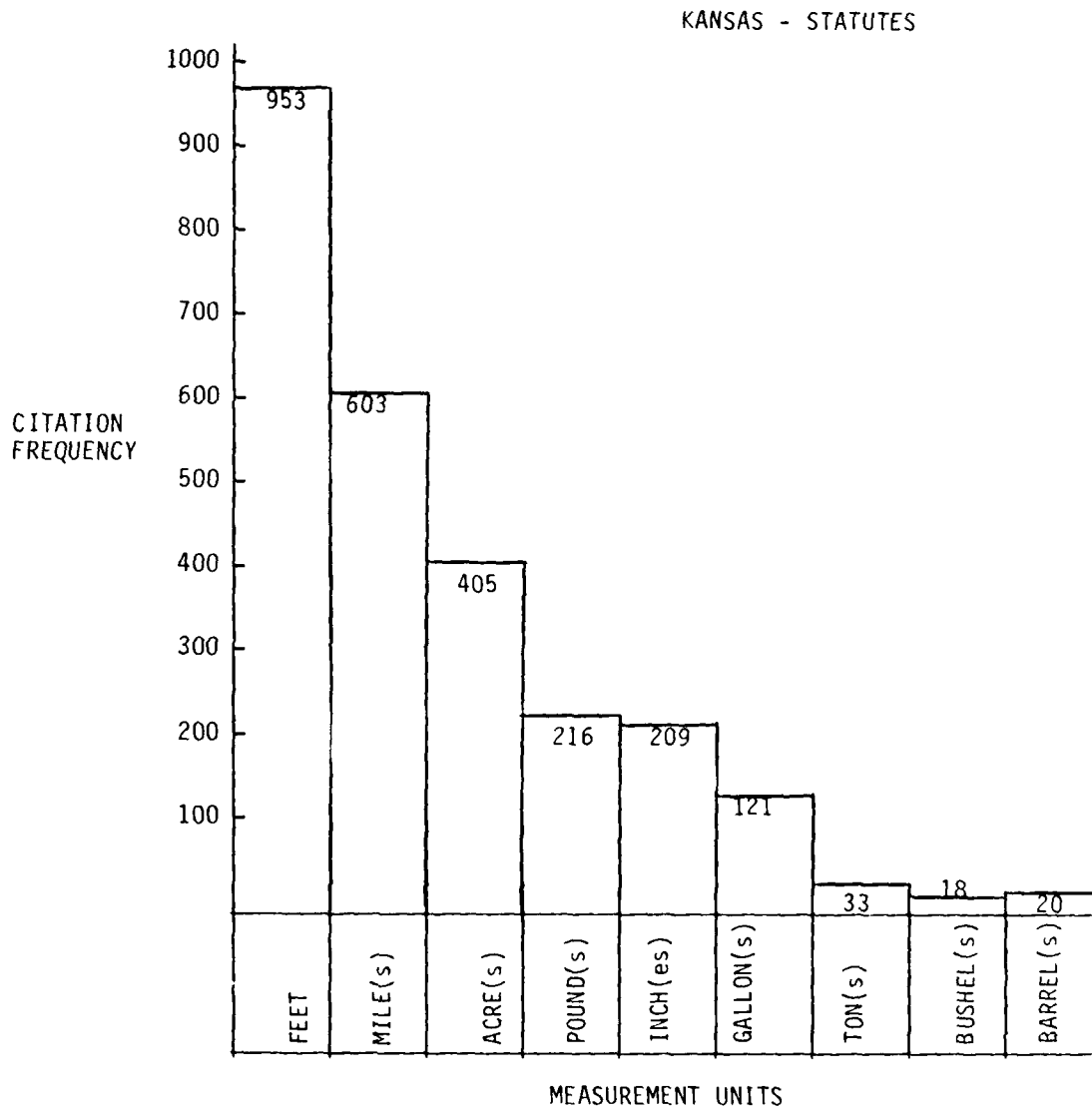


EXHIBIT H-7

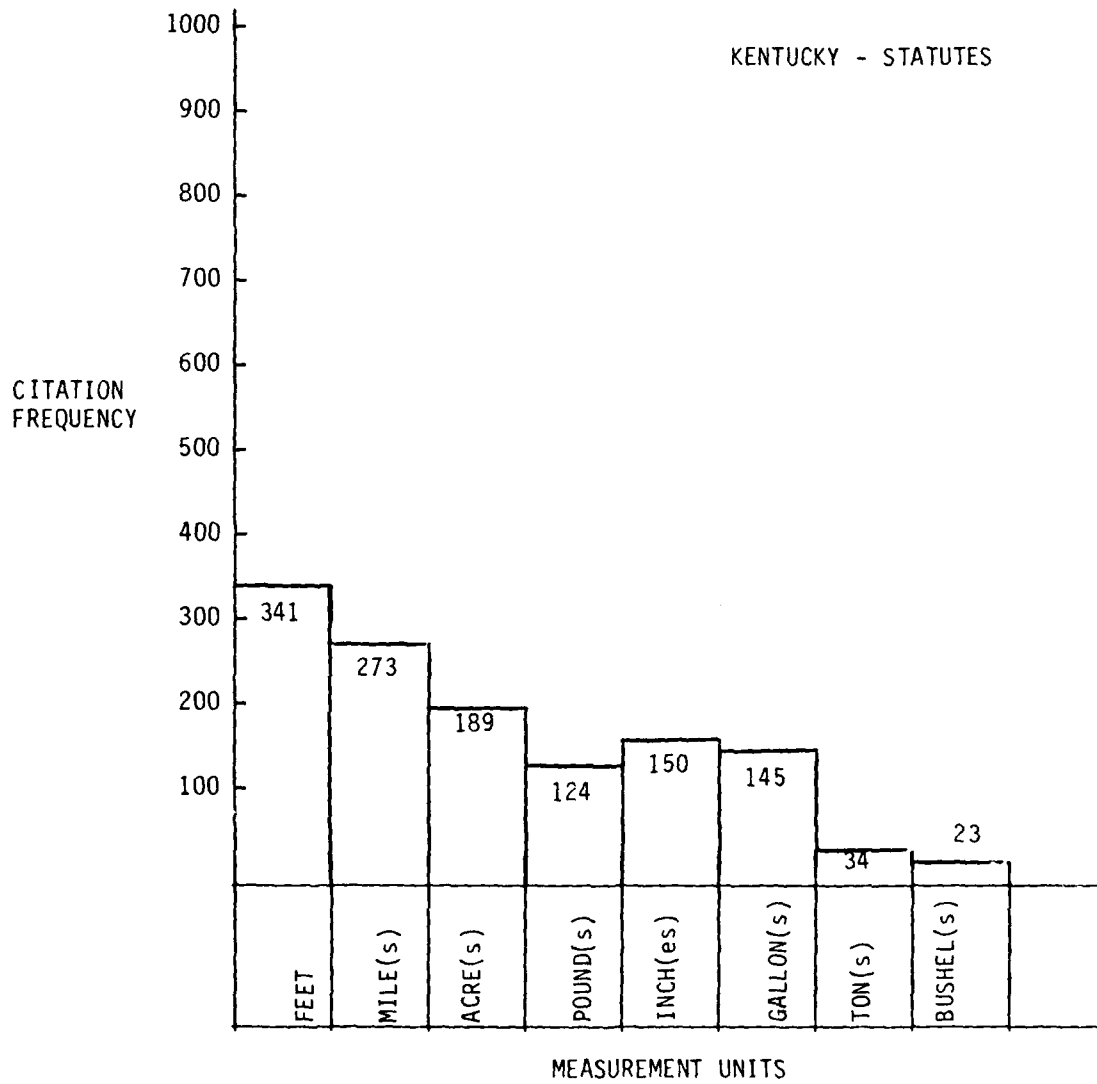
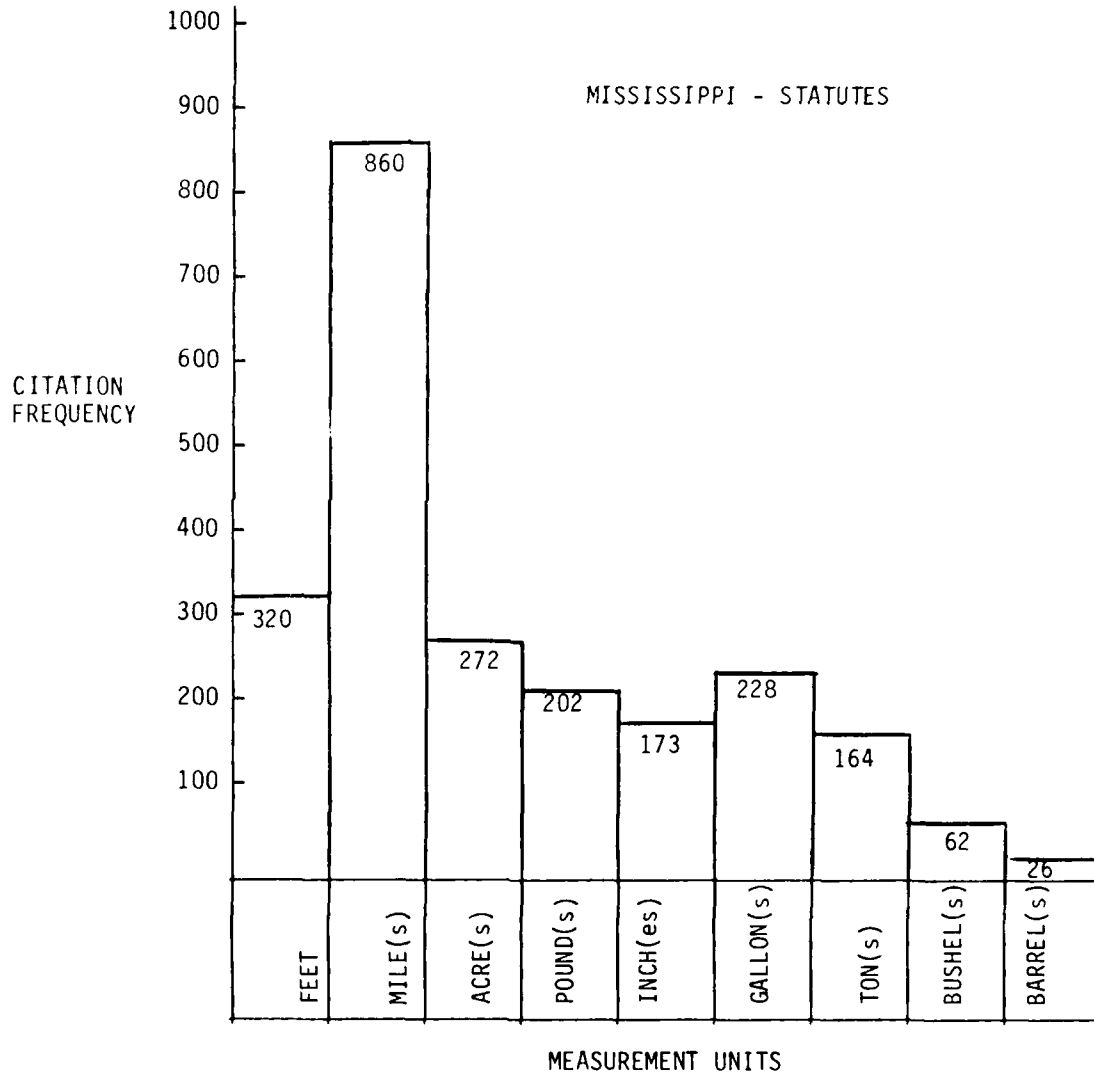
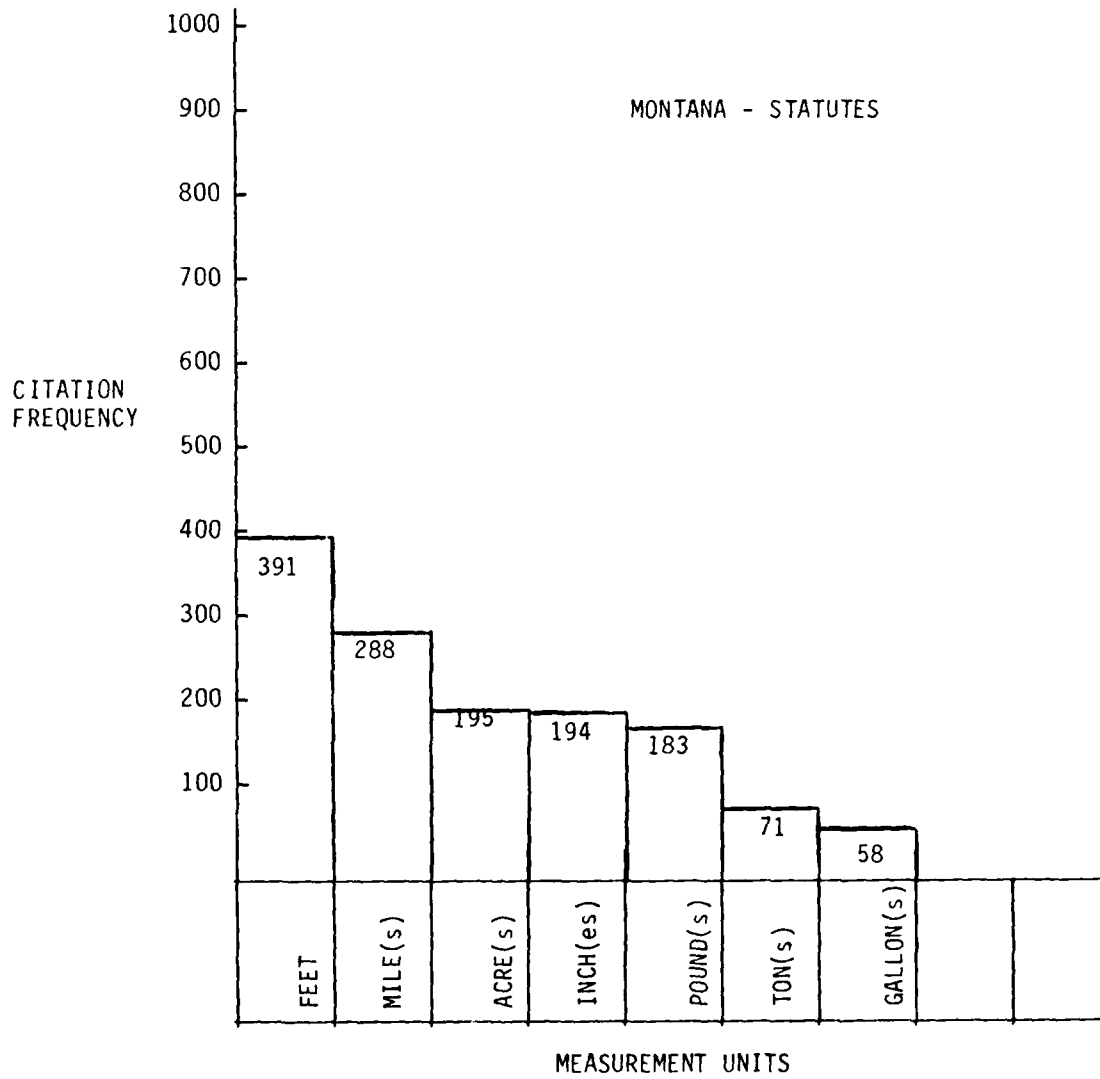


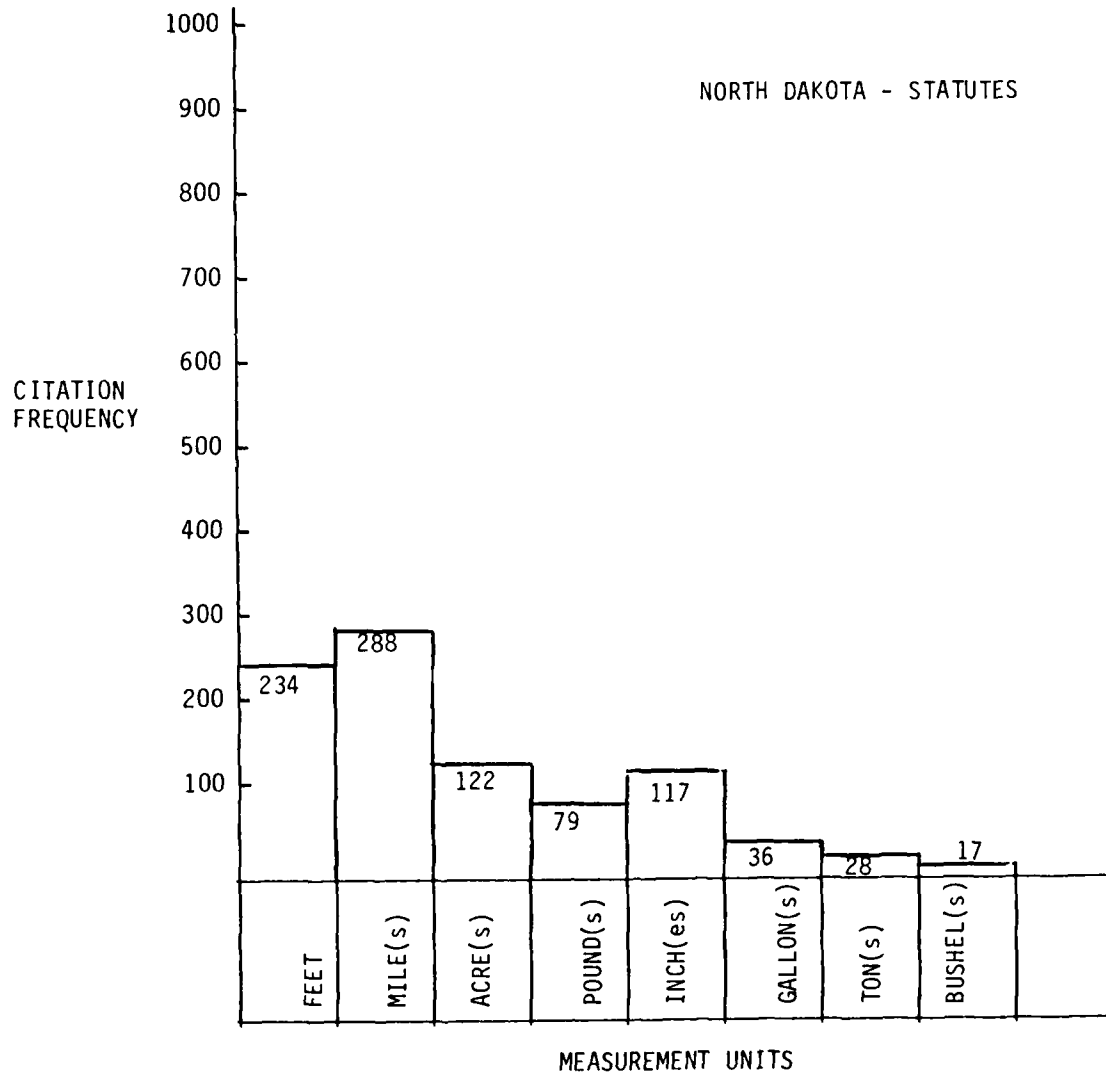


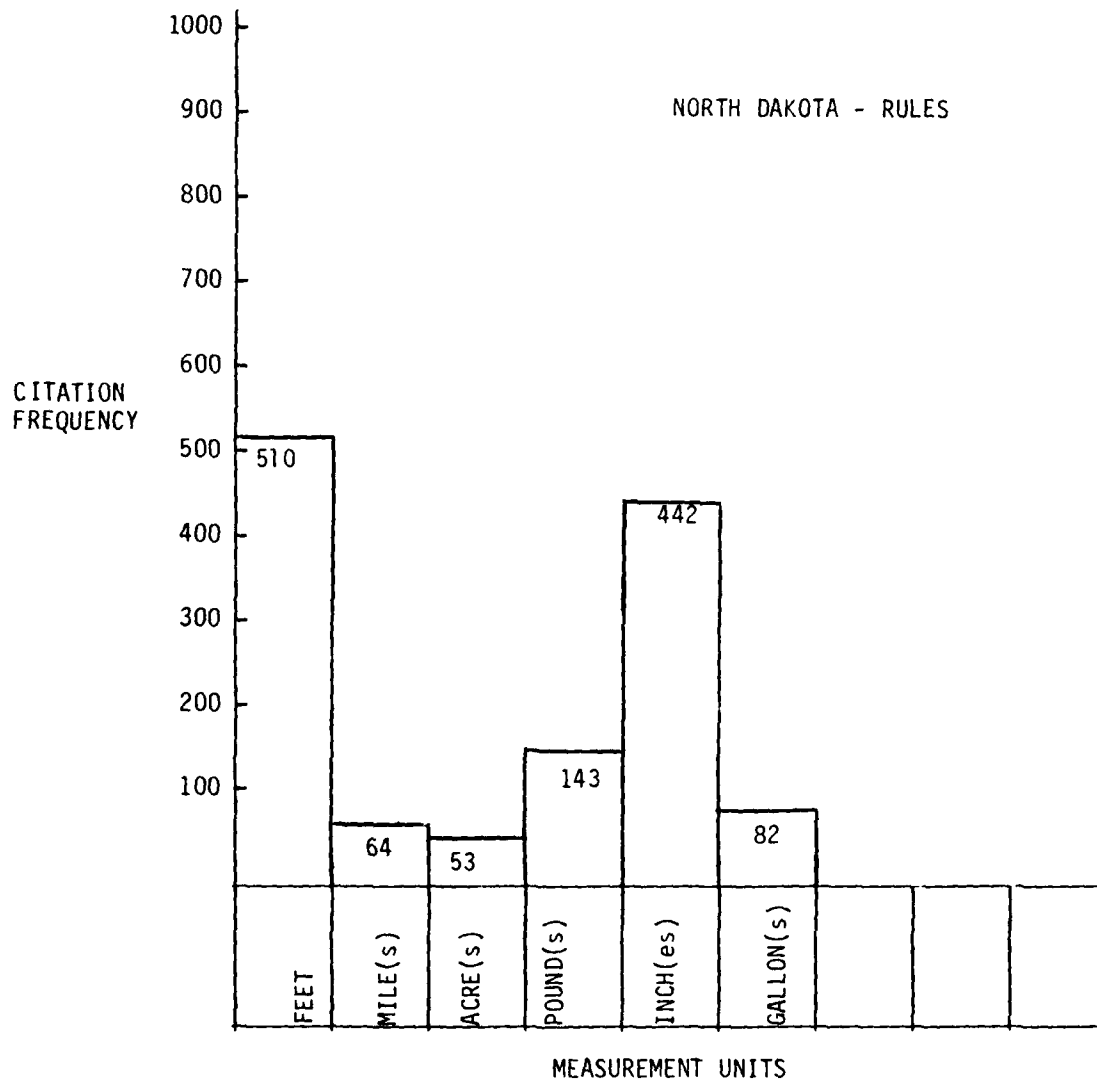
EXHIBIT H-8





# EXHIBIT H-10





# EXHIBIT H-12

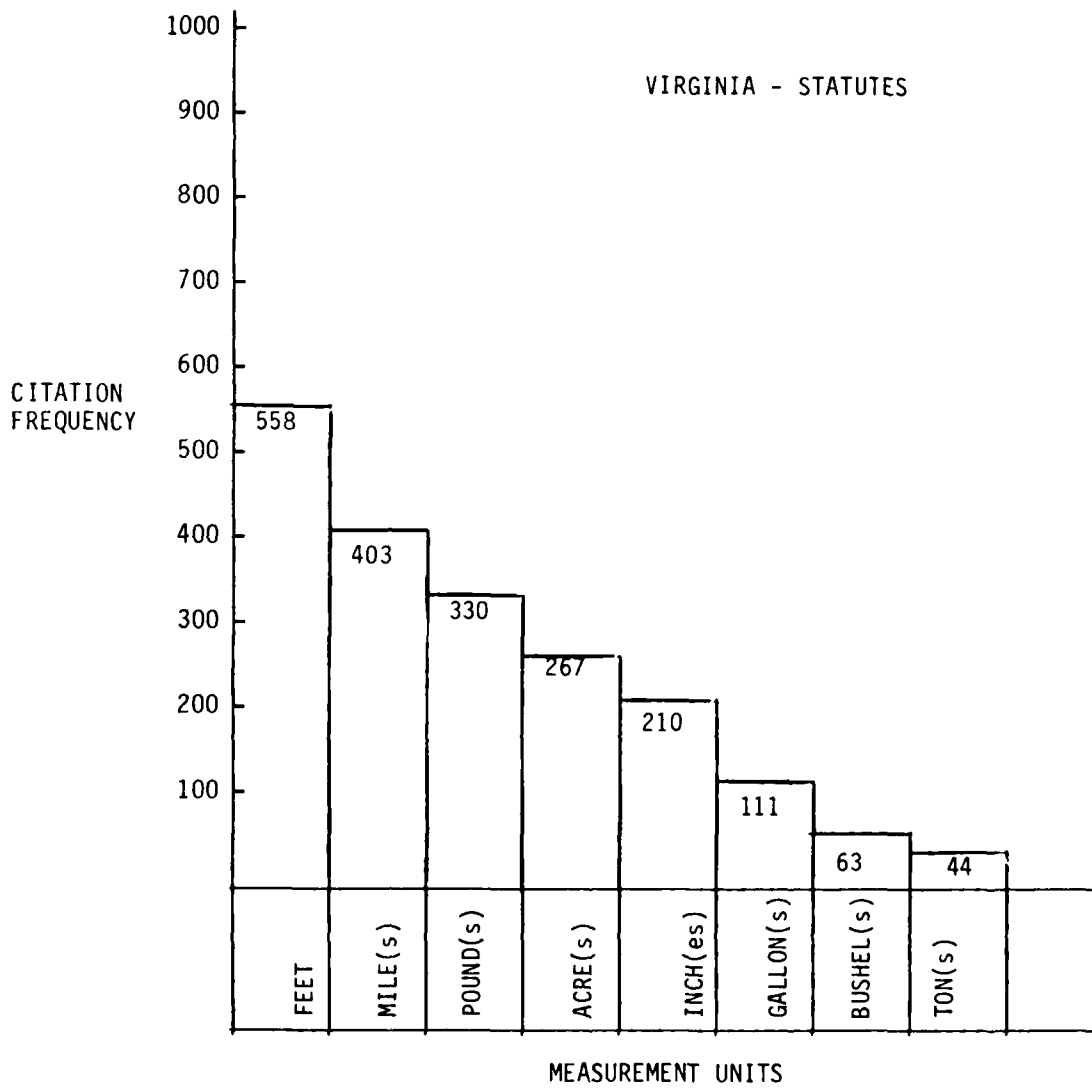
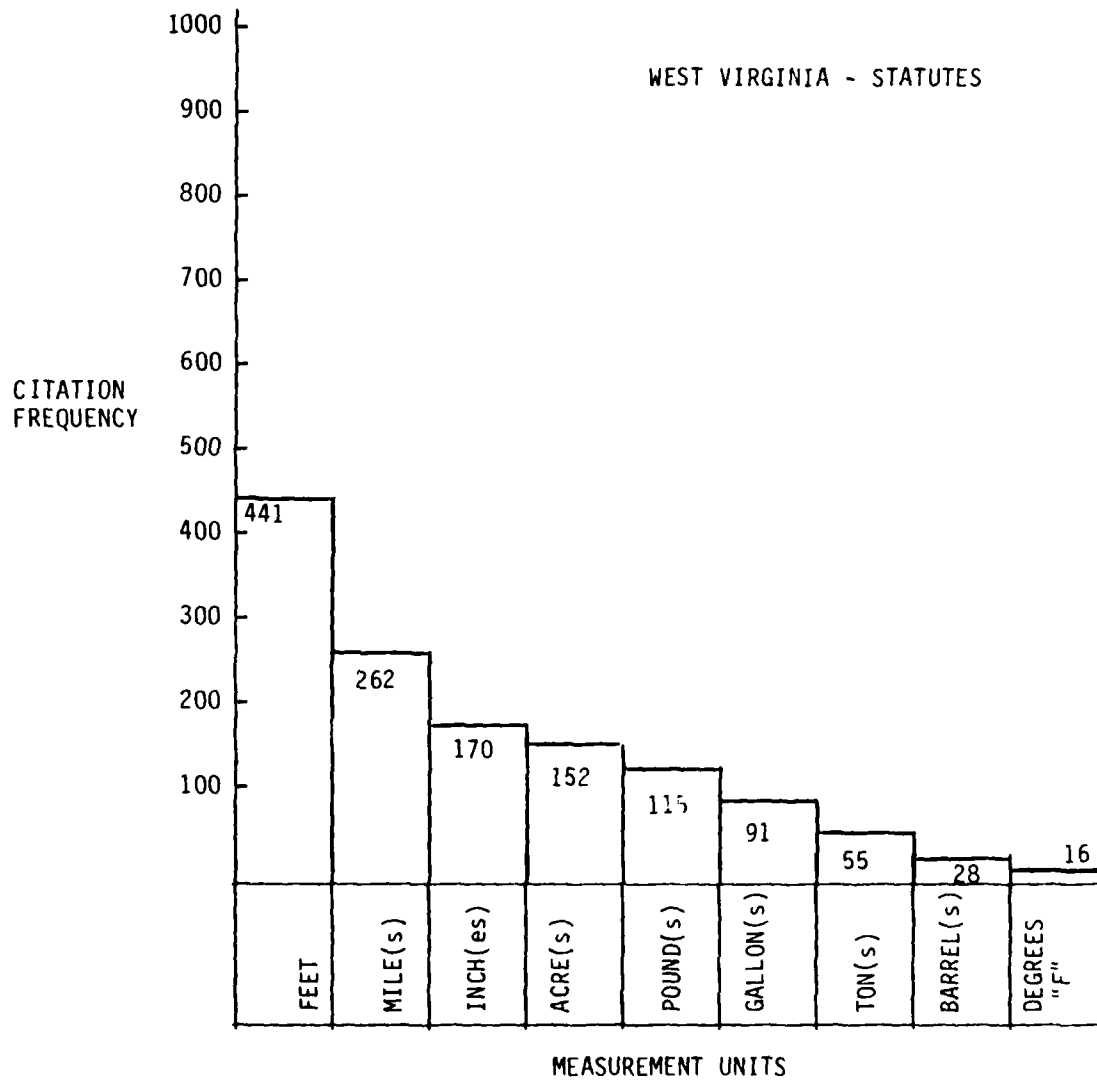
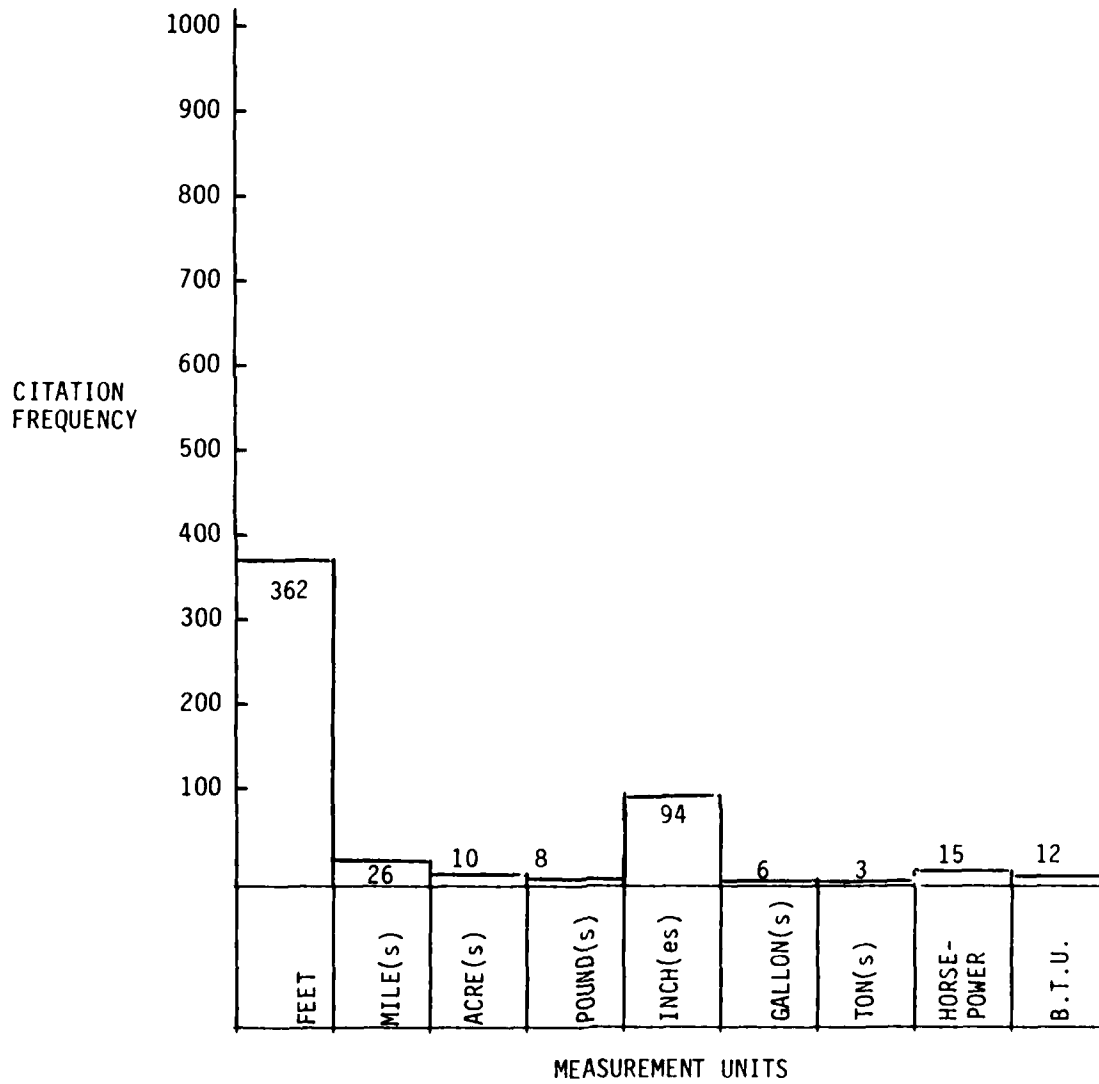


EXHIBIT H-13

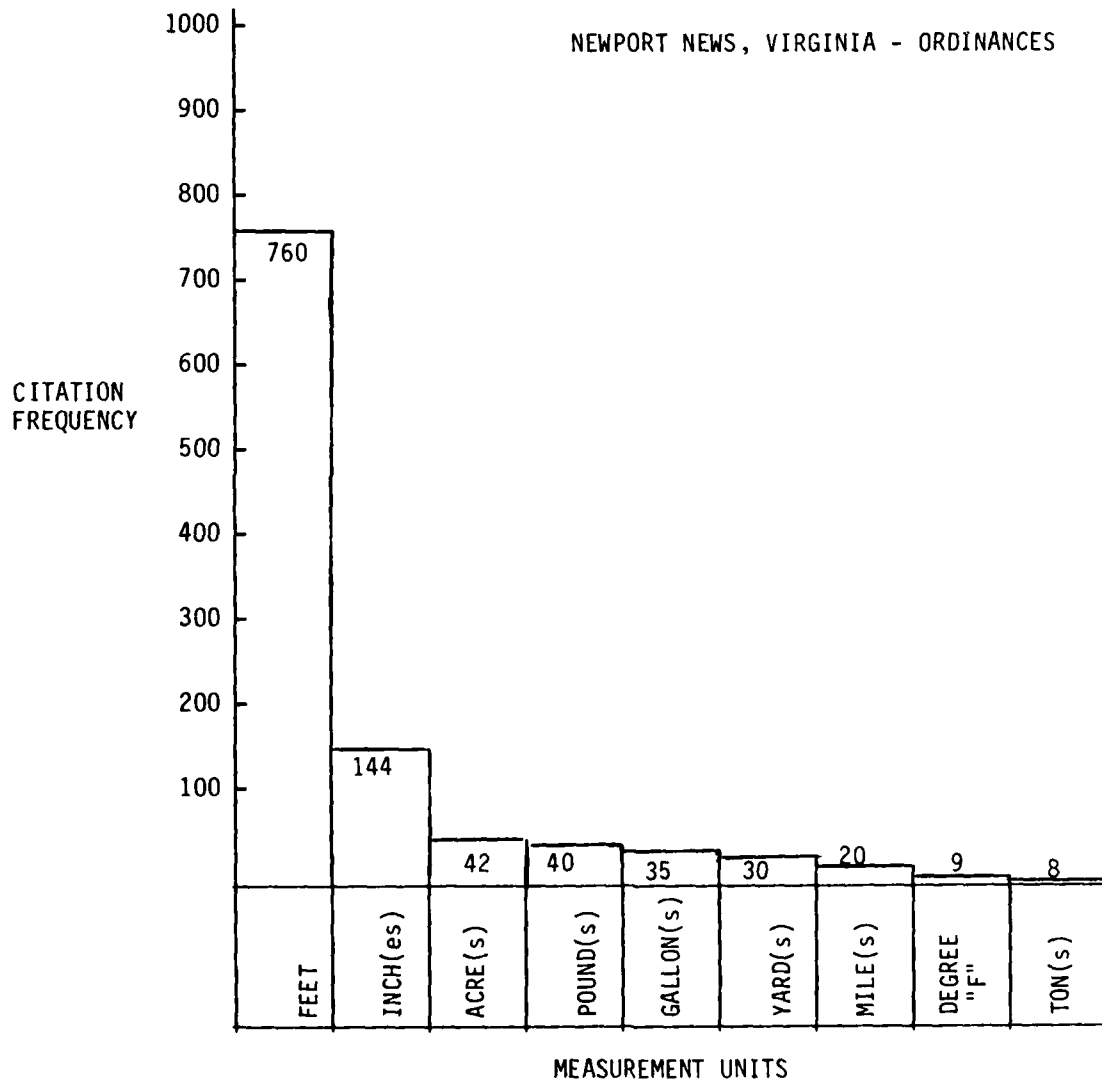


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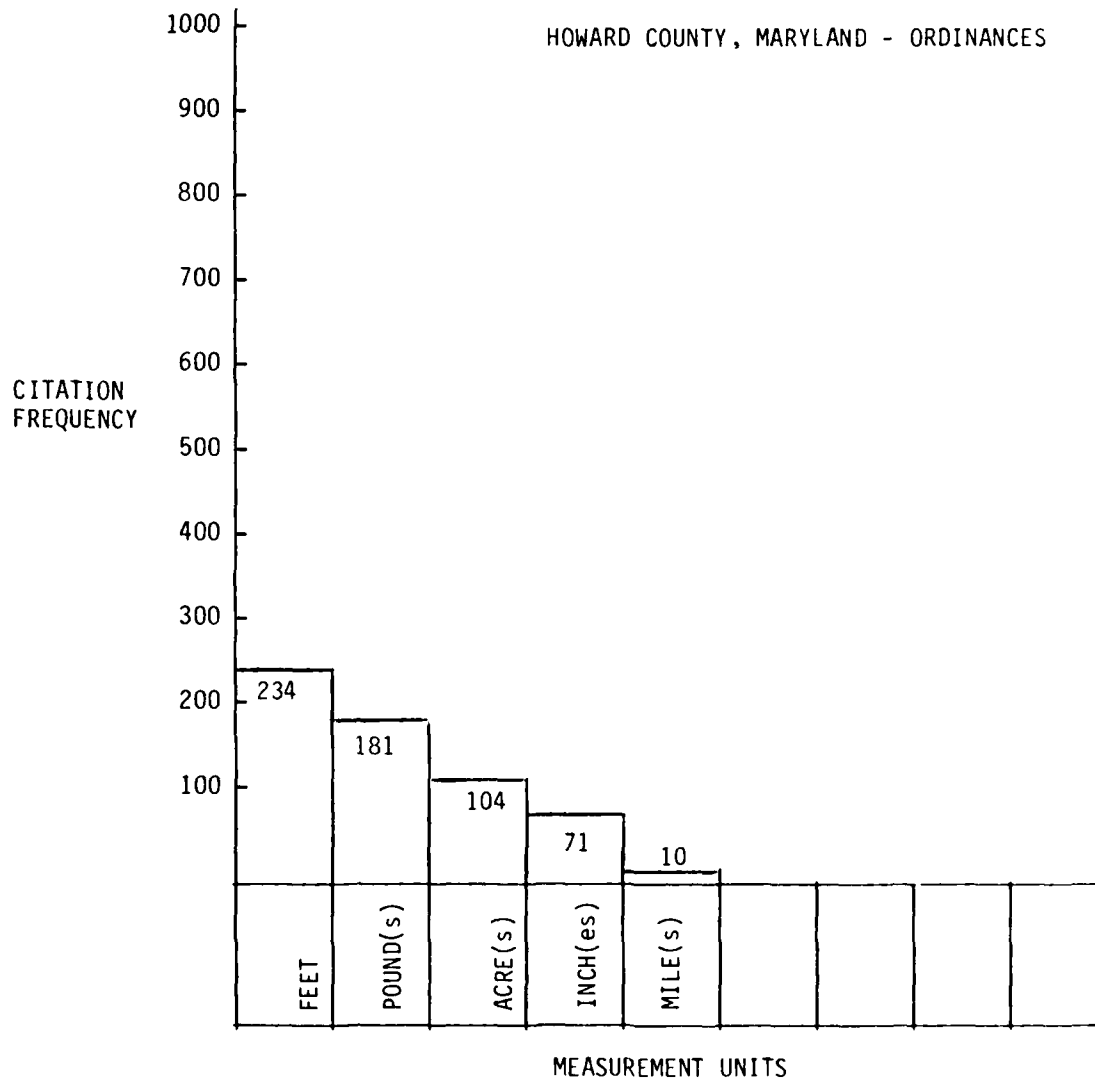
## LEWISTON, IDAHO - ORDINANCES



# EXHIBIT H-15







# EXHIBIT H-17

## SEMINOLE COUNTY, FLORIDA - ORDINANCES

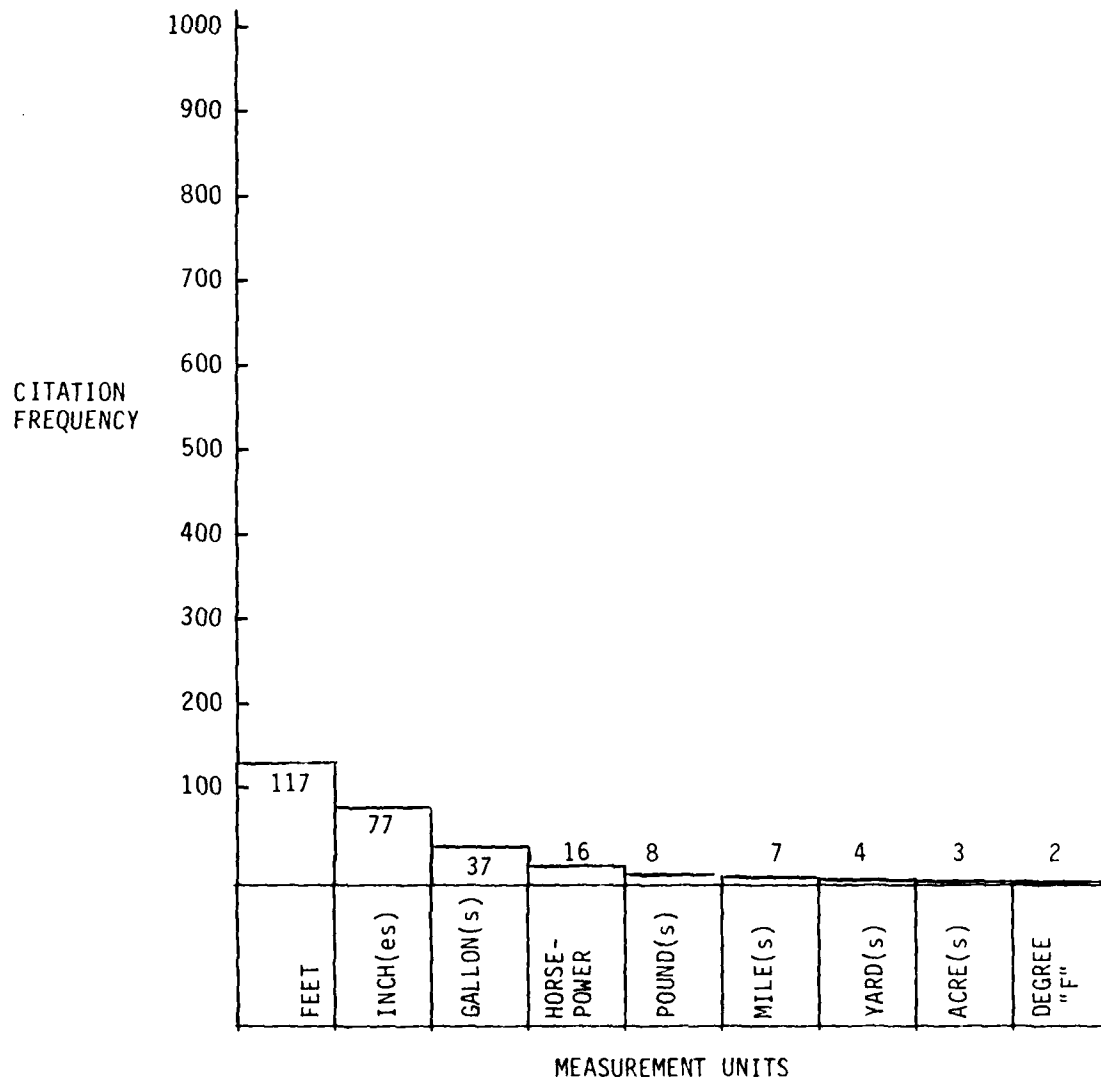
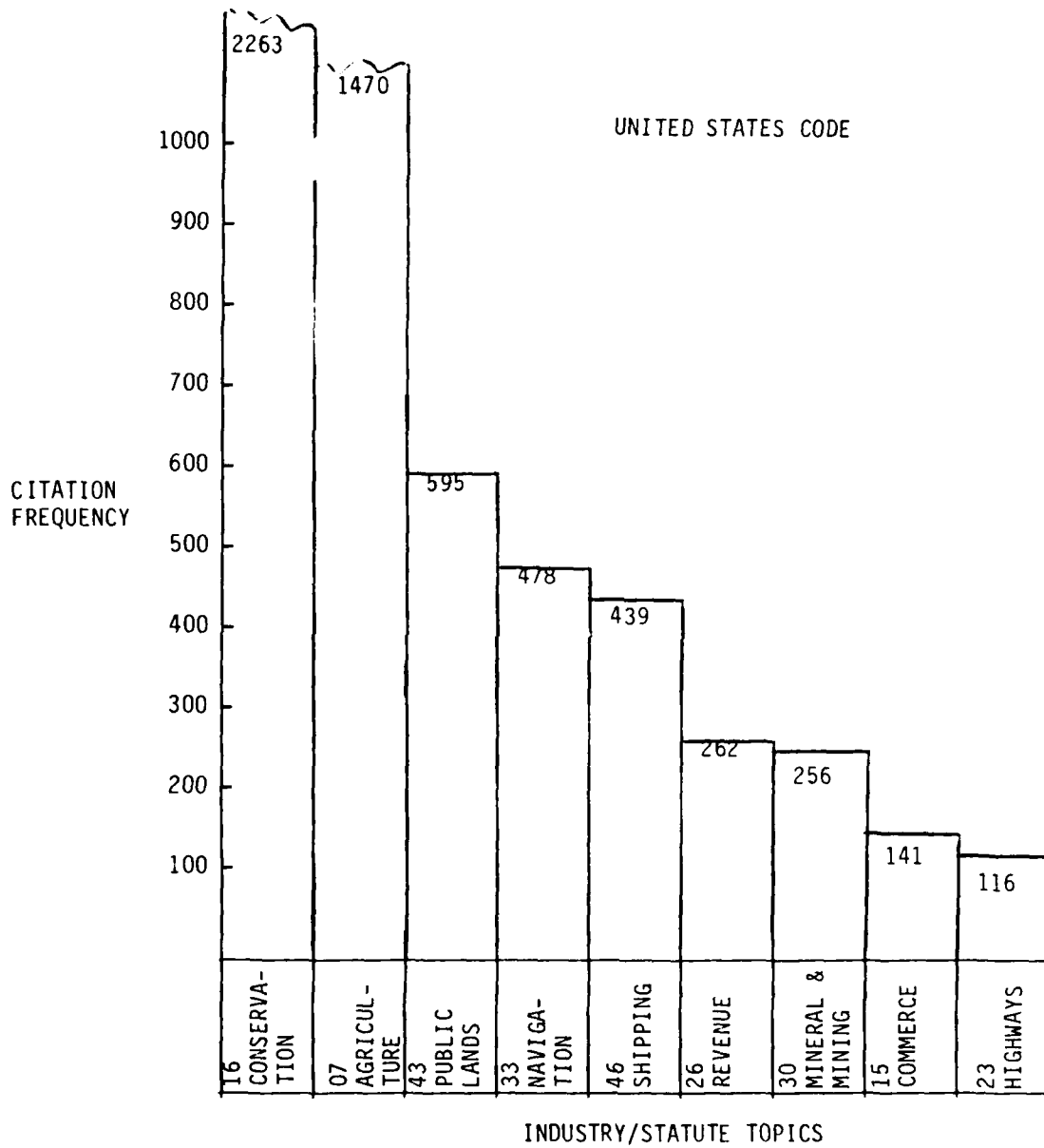


EXHIBIT I-1



# EXHIBIT I-2

## KENTUCKY - REVISED STATUTES

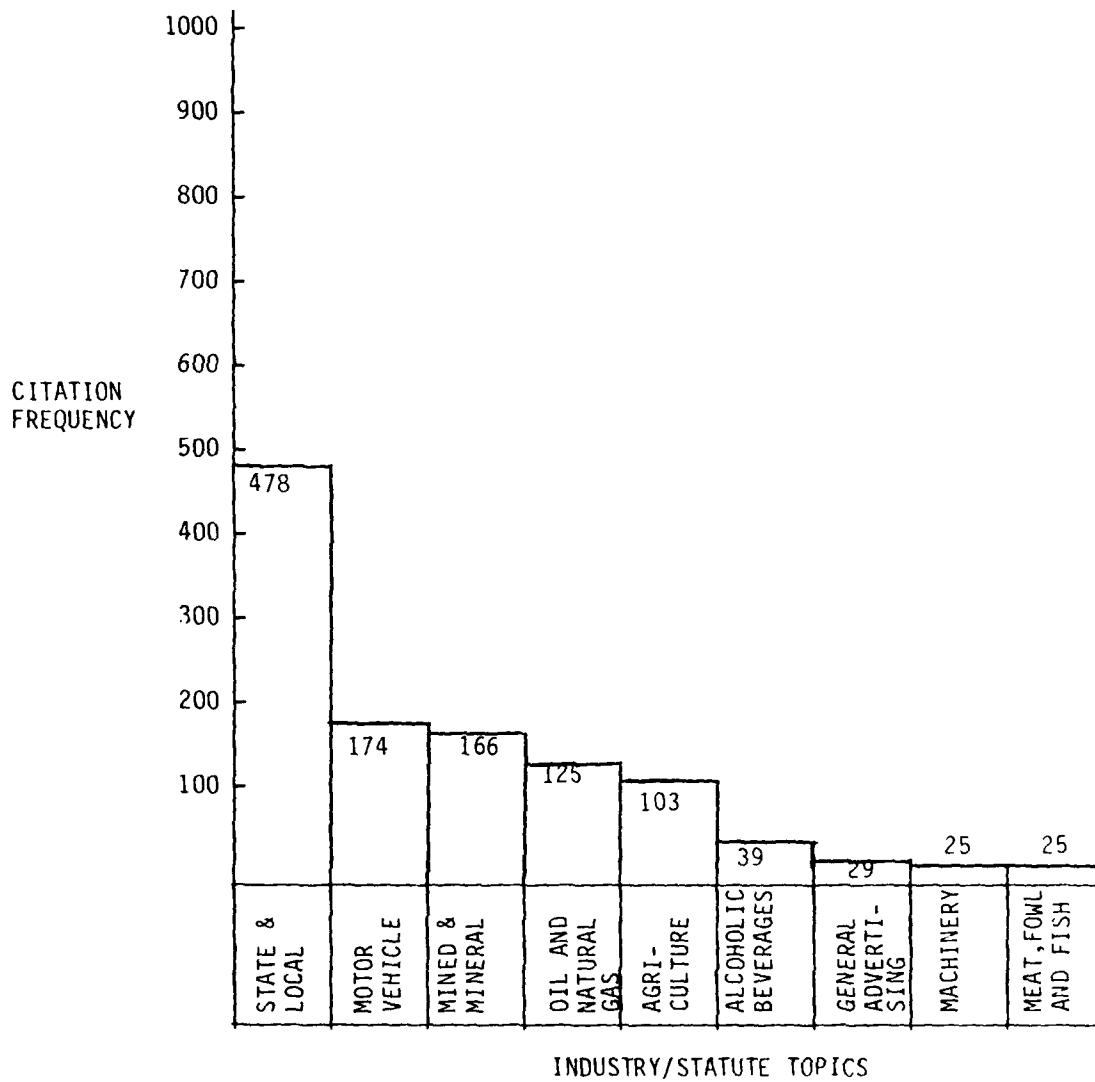


EXHIBIT I-3

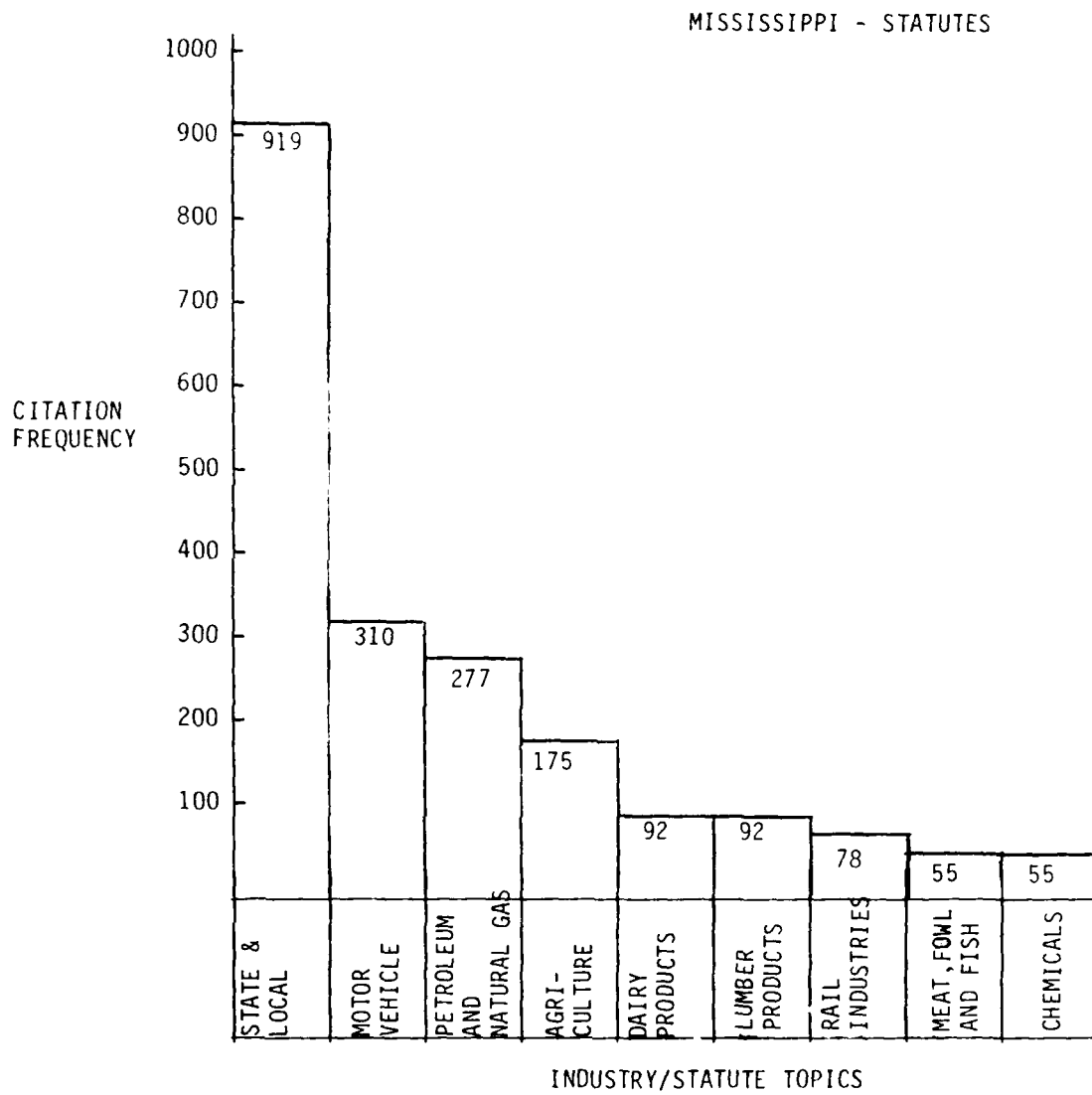
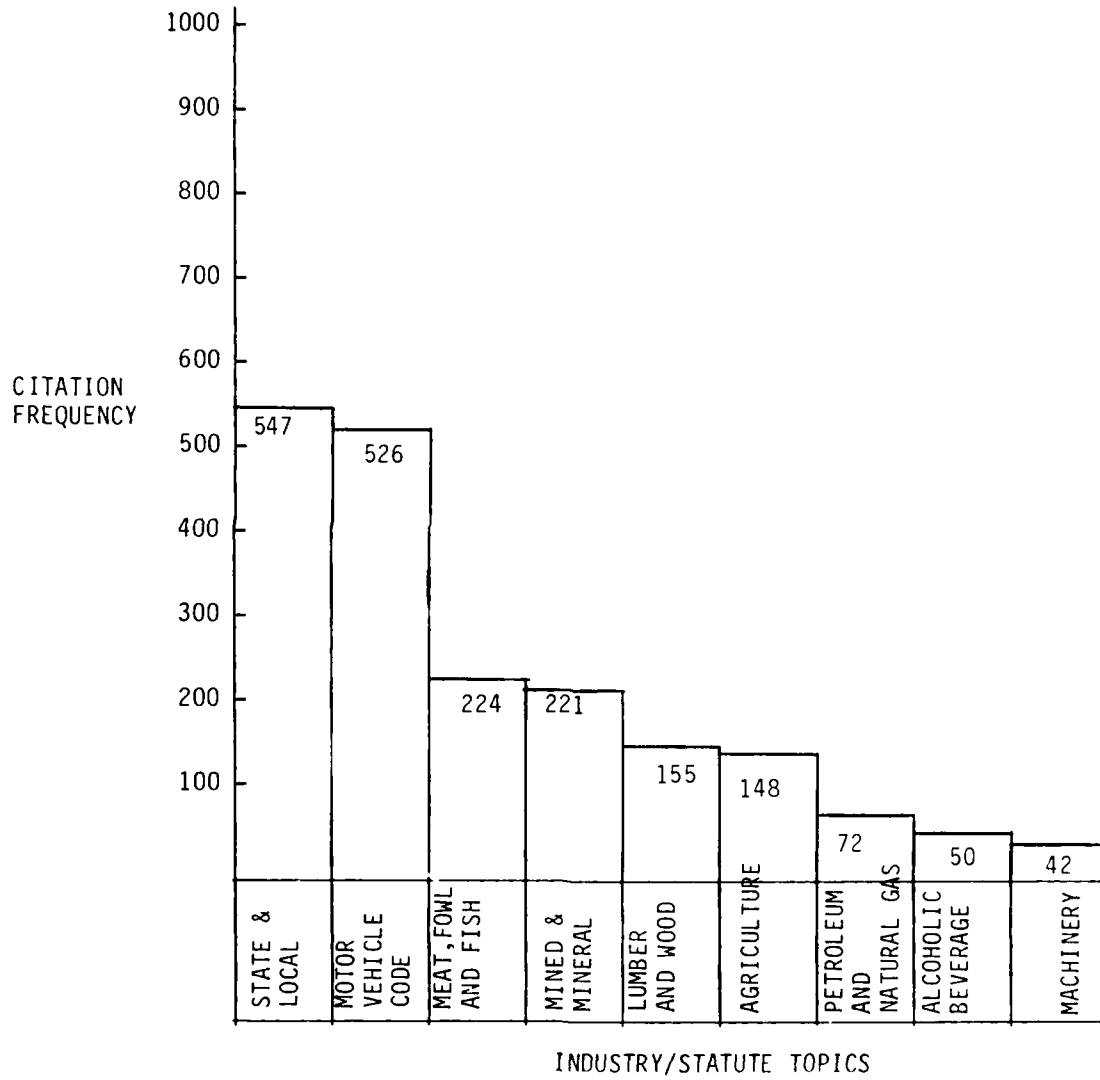


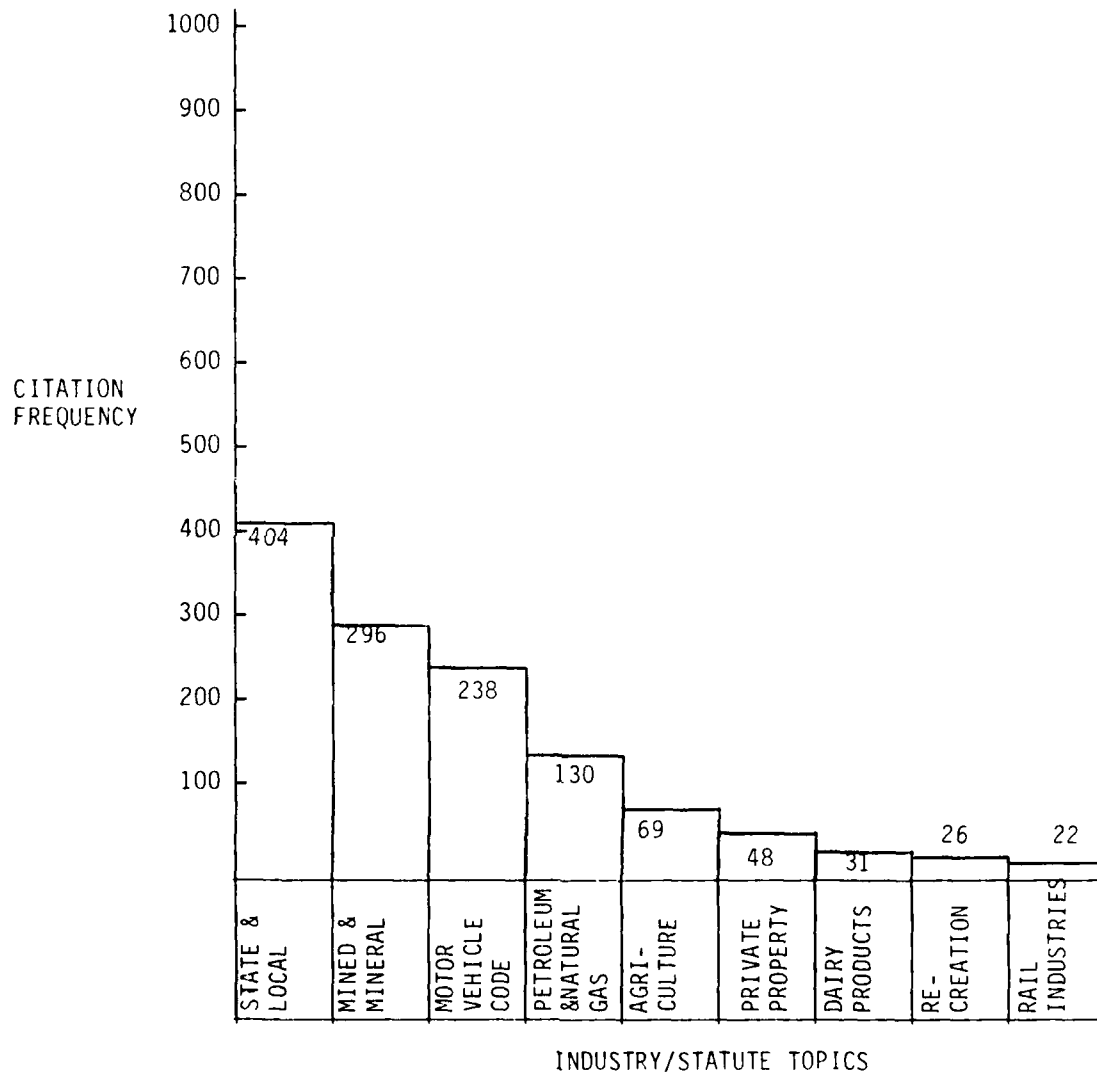
EXHIBIT I-4

VIRGINIA - STATUTES



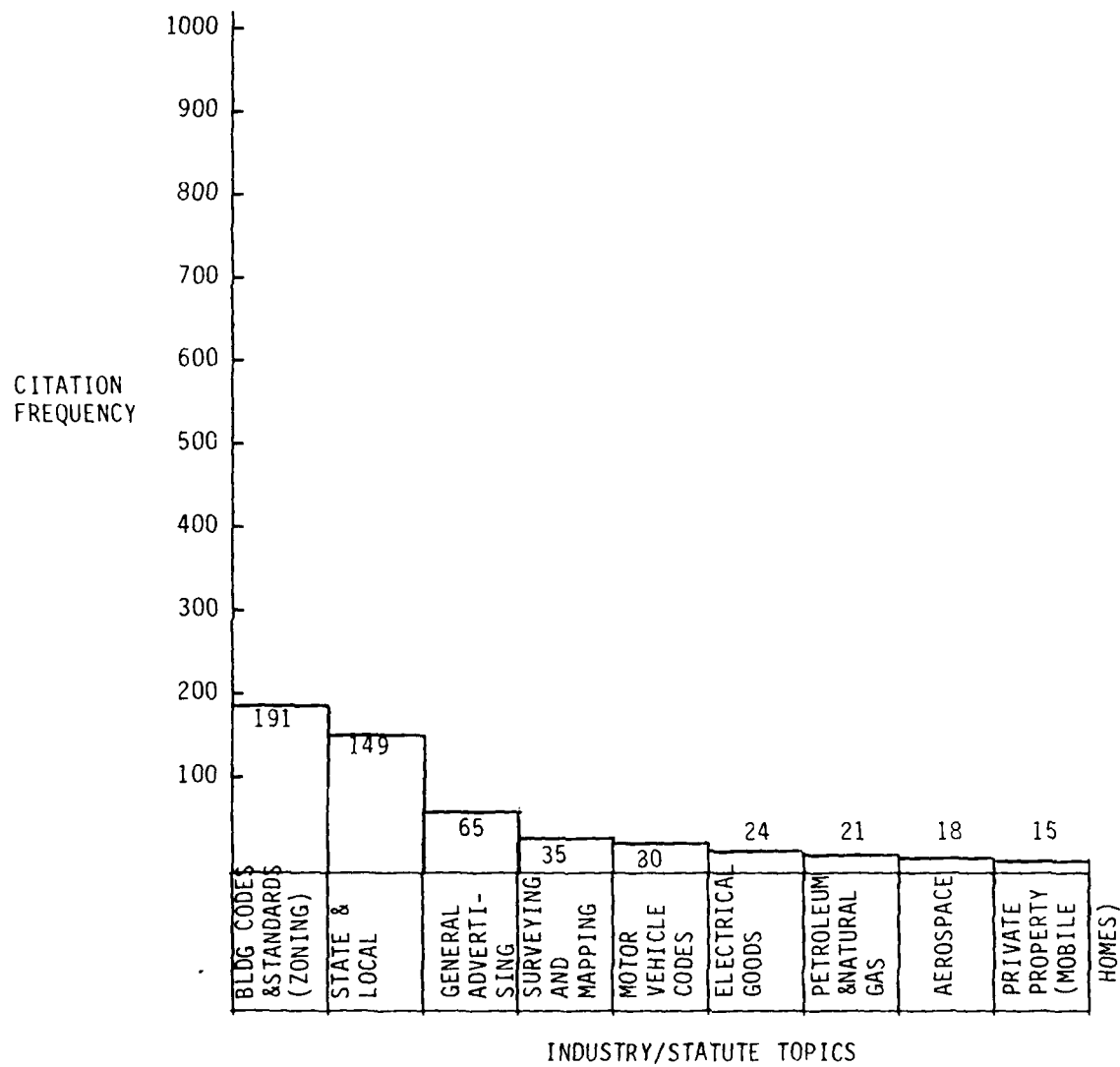
# EXHIBIT I-5

## WEST VIRGINIA - STATUTES



# EXHIBIT I-6

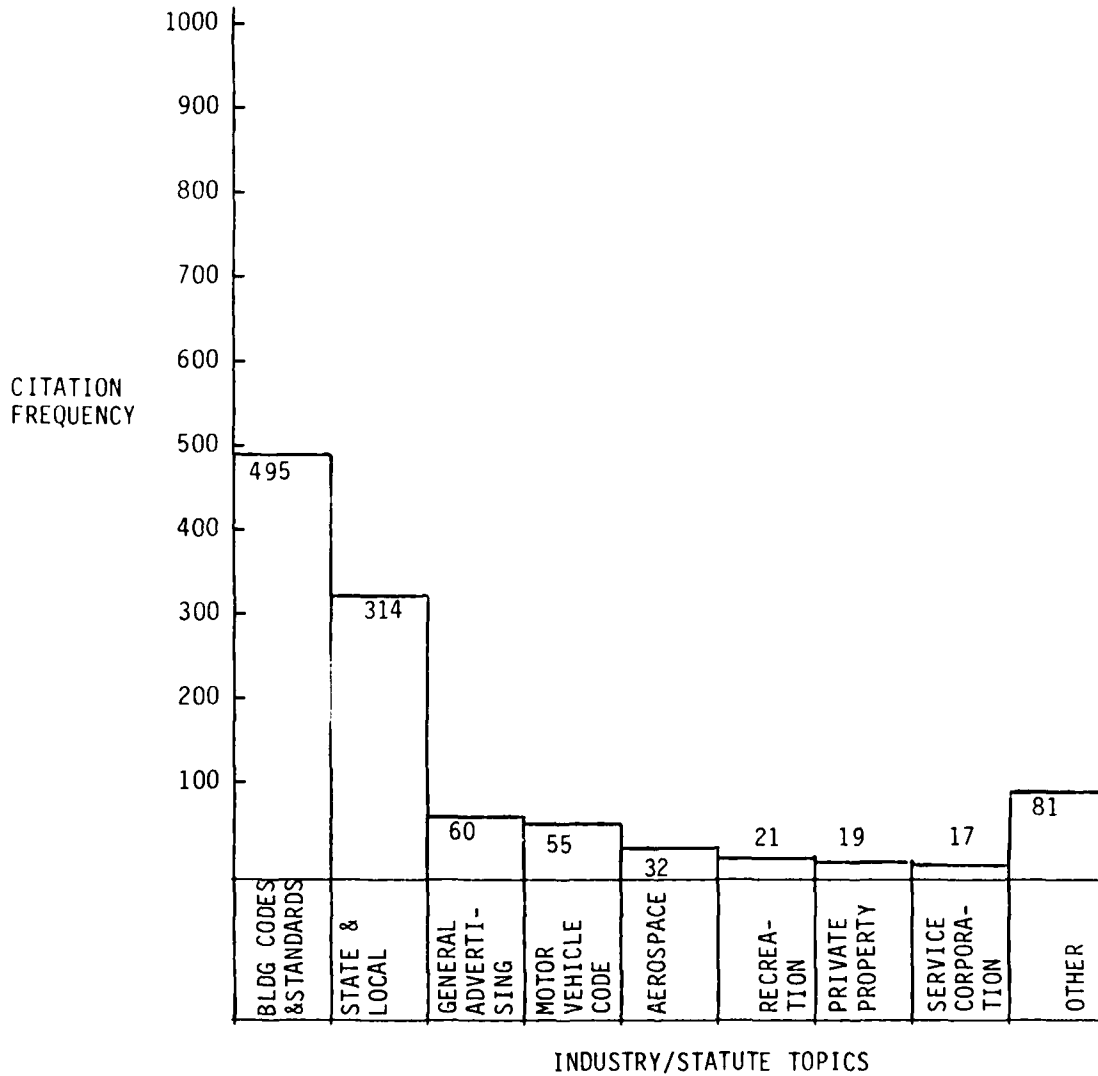
## LEWISTON, IDAHO - ORDINANCES





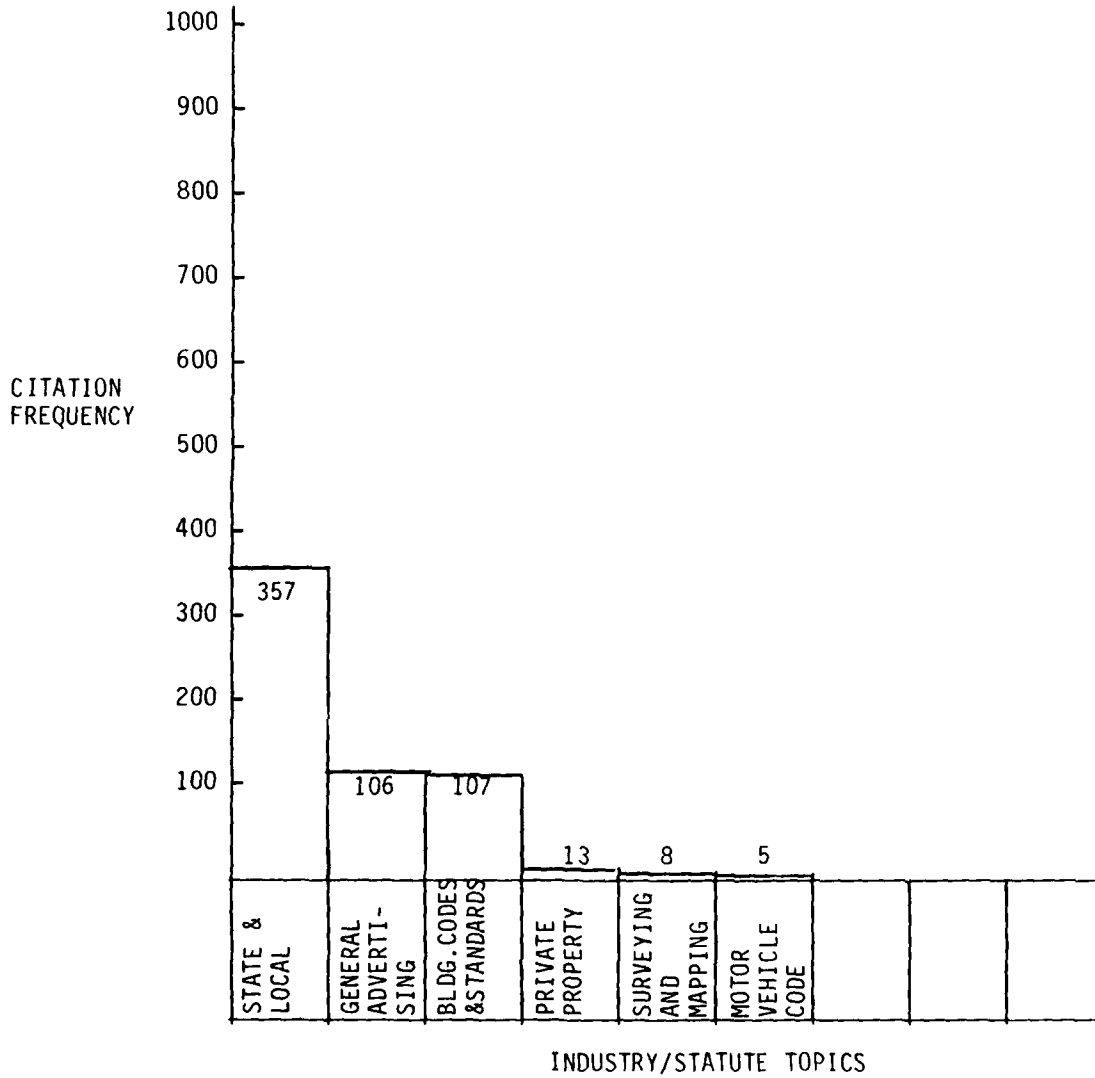
# EXHIBIT I-7

## NEWPORT NEWS, VIRGINIA - ORDINANCES



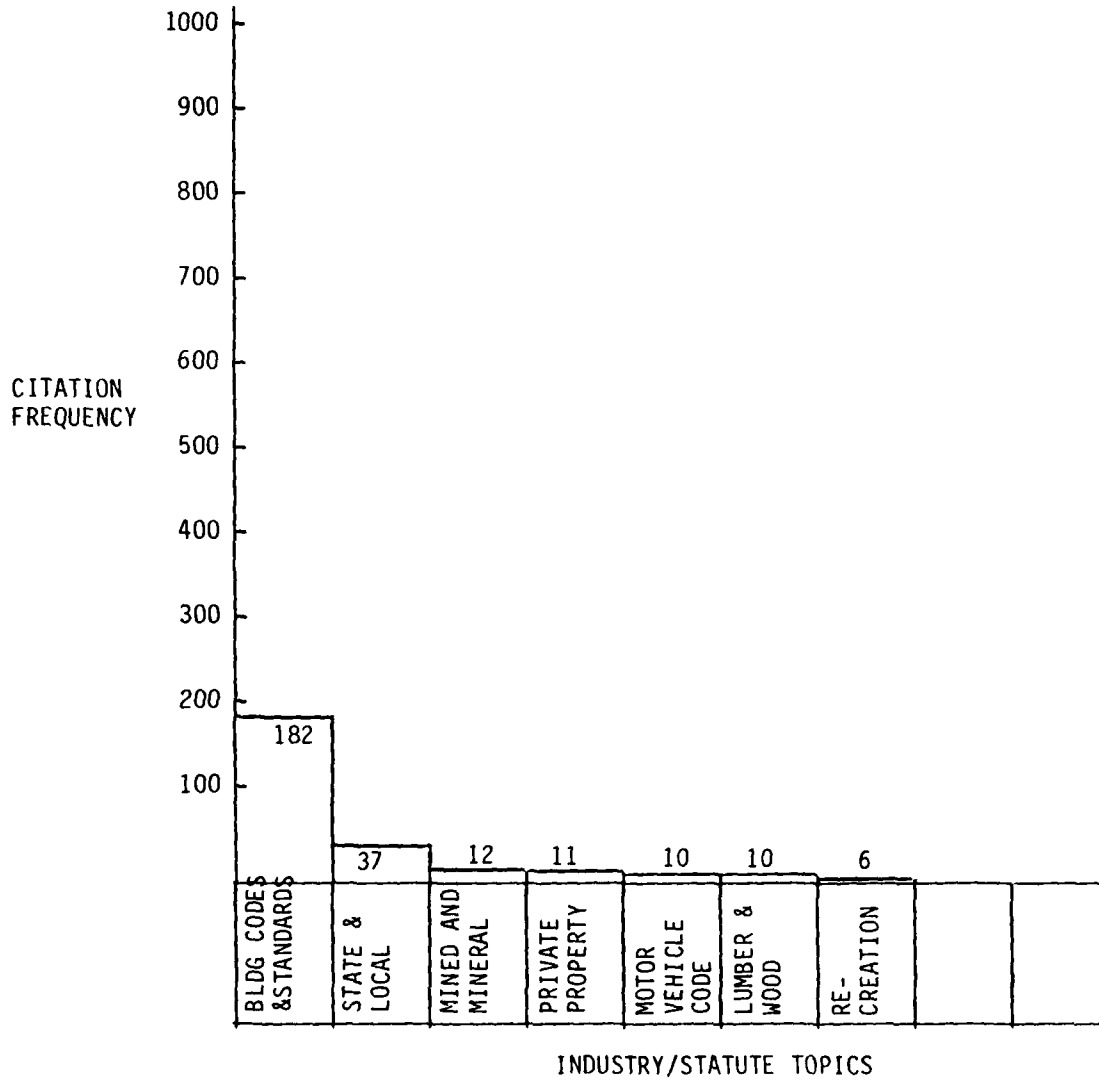
# EXHIBIT I-8

## HOWARD COUNTY, MARYLAND - ORDINANCES



# EXHIBIT 1-9

## SEMINOLE COUNTY, FLORIDA - ORDINANCES



## EXHIBIT J

CALIFORNIA STATE SURVEY  
OF  
BOARDS AND BUREAUS

TITLE OF BOARD OR BUREAU	DO YOUR EXAM QUESTIONS CONTAIN MEASUREMENT TERMS?	
	IF YES COMMENT ON USE OF SOLE METRIC VS DUAL USE	NO
State Board of Accountancy		X
State Board of Architectural Examiners	Would have to perform a major revision of exams	
Athletic Commission	Dual would be OK, sole would cause problems	
Bureau of Automotive Repair	Dual would be OK - questions must conform to Vehicle Code measurement system	
Board of Barber Examiners	Dual OK - sole would cause problems	
Board of Behavioral Science Examiners		X
Cemetery Board	Confusion to applicants	
Bureau of Collection & Investigative Services		X
Contractors State Licensing Board	Unable to cope with change	
Board of Cosmetology	Very little effect	
Board of Dental Examiners	All data in metric terms	

CALIFORNIA STATE SURVEY  
OF  
BOARDS AND BUREAUS

TITLE OF BOARD OR BUREAU	DO YOUR EXAM QUESTIONS CONTAIN MEASUREMENT TERMS?	
	IF YES COMMENT ON USE OF SOLE METRIC VS DUAL USE	NO
Bureau of Employment Agencies		X
Board of Registration for Professional Engineers	Confusion of examinees	
Board of Fabric Care	Dual is fine	
Board of Funeral Directors and Embalmers	Extent is undeterminable	
Board of Registration for Geologists & Geophysicists	No adverse effects	
Board of Guide Dogs for the Blind		X
Bureau of Home Furnishings	No effect	
Board of Landscape Architects	It would greatly increase time spent in conducting exams	
Board of Medical Quality Assurance	Exams are given and scored by personnel trained in metrics	

CALIFORNIA STATE SURVEY  
OF  
BOARDS AND BUREAUS

TITLE OF BOARD OR BUREAU	DO YOUR EXAM QUESTIONS CONTAIN MEASUREMENT TERMS?	
	IF YES COMMENT ON USE OF SOLE METRIC VS DUAL USE	NO
Board of Examiners of Nursing Home Administrators	Present list both	
Board of Optometry		X
Board of Pharmacy	Metric already is primary system	
Board of Registered Nursing	Exam questions use metrics	
Bureau of Repair Services		X
Board of Certified Shorthand Reporters	No effect	
Structural Pest Control Board	No problem	
Tax Preparer's Program		X
Board of Examiners in Veterinary Medicine	For a number of years have used dual terms	
Board of Vocational Nurse & Psychiatric Technician Examiners	Coordinate change with curriculum to insure students are familiar with metrics	

## V. MANY CANDIDATE CHANGE MECHANISMS EXIST

Since the nature of the study was to determine the extent to which existing laws and regulations require change, a change mechanism was defined as any established method for changing a law or regulation at any level of government. Potential mechanisms could range from a legislative change to the U.S. Code to a change in a local ordinance. The change mechanisms have been organized in three categories, based upon the source of the change. These three categories are legislative actions, administrative and executive actions, and judicial actions. The paragraphs that follow describe the specific change mechanisms that have been identified throughout the study.

### A. LEGISLATIVE ACTIONS

The major legislative mechanisms available to accommodate metric measurement units are the traditional legislative processes within the United States federal government, the fifty states and six territories, and the thousands of municipal governments. These legislative actions, while they each have somewhat unique characteristics, are basically similar. They follow the U.S. legislative process in which a draft legislative action is initiated in Congress; reviewed by both the House and Senate; and subsequently either passed by both, amended and passed, or rejected. Within this overall process, various categories or types of legislative actions are possible. Complex omnibus bills which would change many measurement citations at one time are a possibility. Specific legislation which addresses only limited or unique aspects of Federal or state laws is another possibility. A third approach is to authorize an administrative body to accommodate the changes needed.

#### 1. Congressional Action

Since measurement units are imbedded in many sections of the United States Code, it is obvious that some action (legislative or administrative) will be required to change these legal deterrents to facilitate the use of metric units. The experiences of Great Britain, Australia, and Canada have identified a number of alternative approaches to Federal legislative change. These range from broad statements of governmental intent to specific legislative changes dealing with sections of Code. The alternative legislative mechanisms available at the Federal level of government include the following:

- In conjunction with the USMB's Review and Acceptance procedures for sector metric conversion plans, an amendment to PL 94-168 could be passed which would provide the U.S. Metric Board with the authority to develop Federal and state legislative changes associated with each sector conversion plan. These legislative changes to existing U.S. statutes or state laws would be sub-

mitted to Congress and, subsequent to a specified period for Congressional review, would become effective as changes to the U.S. Code or to state statutes in the absence of Congressional veto.

- . The Congress could enact comprehensive legislation which would provide a rational approach to changing the many legal deterrents in the Federal and state codes. One approach to this comprehensive legislation is enactment by Congress of the Uniform Metric System Procedures Act, which was developed by the National Conference of Commissioners on Uniform State Laws with the proviso that, as to state and local laws and regulations, it be administered and enforced through state agencies and courts.
- . Omnibus legislation could be passed by Congress which would change specific references to measurement units in all of the appropriate sections of the U.S. Code. This omnibus legislation would be extensive because of the many references to measurement units in the U.S. Code. An example of Federal omnibus metric legislation is included as Appendix D to this report.
- . Specialized legislation could be enacted by Congress to deal with specific issues such as tax rates or standards. As an example of this legislation, the IRS code (26 U.S.C. 5001) which currently taxes distilled spirits on a rate per gallon could be changed so as to be consistent with the new metric wine sizes. This Code could be changed to provide for taxes on a rate per liter or per hundred liters.

## 2. State Legislative Actions

To remove the thousands of deterrents imbedded in state statutes, some legislative action will be required by state government. A number of alternatives exist for the states to remove these deterrents to metric change. Each of the change mechanisms in the state legislative category are described in the following paragraphs.

- . States could enact comprehensive state-wide legislation which would provide a rational approach to changing the many legal deterrents in the state codes. One approach to this comprehensive legislation is adoption of the Uniform Metric System Procedures Act, approved by the National Conference of Commissioners on Uniform State Laws in August, 1979. (See Appendix E or Appendix F.)
- . A state could enact omnibus legislation which would attempt in one bill to change or remove all the legal deterrents existing in state codes. The nature of this omnibus bill would be to



identify each section of code where customary measurement units exist and replace these traditional units with the appropriate metric units. Here proper timing of the effective dates of the various changes would be a major, and perhaps insuperable, problem. This would follow the example previously discussed at the Federal level and illustrated by Appendix D.

- . A number of independent organizations develop and promulgate uniform state codes addressing various subjects; for example, motor vehicle codes. These organizations have established change mechanisms for promulgating new or revised versions of codes throughout the states. Should these organizations choose to create a metric version of a model state law, it could be readily adopted by the 50 States and remove those deterrents dealing with a specific topic. Examples of the model code organizations that work with state governments are as follows:

National Conference of Weights and Measures-Model Weights and Measures Law

National Committee on Uniform Traffic Laws and Ordinances-Uniform Vehicle Code

National Geodetic Survey-State Plane Coordinate System Legislation

Building Officials and Code Administrators International-Basic Building Codes

Council of American Building Officials-Uniform-Building Codes

Southern Building Code Congress-Standard Building Codes

- . States could enact soft-conversion laws. With this approach, a state would direct an administrative agency to insert the direct conversion metric equivalent unit following each customary unit through the normal process of codification of state laws. An example of such legislation from the State of North Dakota is shown in Appendix G. This approach allows for unintentional changes in the tolerances implied by the new legislative statement.

### 3. Municipal Actions

Municipal governments, whether they be cities, counties, or towns, will have to modify ordinances where customary measurement units are imbedded. These will range from simple changes to water tariffs to changes in building codes and traffic laws. Alternative approaches for municipal governments are described in the following paragraphs.

- . The individual ordinances of a municipality can be changed on a case-by-case basis as specific issues come up. This has already happened in two cases where cities changed their water tariffs to allow for the installation of metric water meters.
- . Through the adoption of uniform model ordinances, municipalities could enact metric versions of ordinances. This approach would be particularly effective in the areas of building codes and traffic regulations.
- . Many municipalities hire commercial firms to perform codification of their ordinances. These firms, with proper guidance and direction from the U.S. Metric Board, could provide for the adoption of rational metric units in municipal codes during the normal process of codification.

#### 4. Other Legislative Actions

Regional organizations and agencies established by legislation, such as port authorities, highway authorities, or bridge authorities, may require changes in enabling legislation to allow them to change tax rates or other measurement-sensitive activities to accommodate metric units. Because each of them is unique, an analysis of the legislative problems associated with metric change was not performed. However, a list of potential organizations which should be scrutinized for legislative deterrents is included as Exhibit K.

#### B. ADMINISTRATIVE AND EXECUTIVE ACTIONS

Within the Federal government, executive branch agencies are responsible for the implementation of Federal legislation. They perform this implementation through the promulgation of Federal regulations which are codified in the Code of Federal Regulations (CFRs). At the state level, state rules are administered by state agencies in a very similar fashion. These rules tend to expand upon, and provide detailed implementation of, state laws. Formalized procedures for regulation and rule promulgation have been established at the Federal and state levels of government.

Through the administrative processes at the Federal, state, and municipal levels, it is possible to exert substantial change via statements of administrative policy. These are issued at the executive branch level by Presidential Executive Orders, which direct executive agencies to perform certain tasks in support of Federal policy. Within state governments, gubernatorial executive orders have virtually the same impact on state agencies. It is conceivable that through the issuance of executive orders, state or Federal agencies could be directed to remove legal nuisances or legal deterrents from the regulations which they administer. Actions taken by the Interagency Committee on Metric Policy (ICMP) would assist Federal agencies in making these regulatory changes.

### C. JUDICIAL MECHANISMS

The U.S. legal system allows for the interpretation of state and Federal laws by the appropriate judicial authority. This interpretation takes the form of decisions by either a state or Federal Court having jurisdiction over the controversy. Thus, adequate judicial change mechanisms exist which could potentially be applicable to particular areas of metric change.

### D. ANALYSIS OF THE MECHANISMS

Each of the mechanisms previously described exist to some extent within the three major levels of government; that is, Federal, state, and municipal. In addition, there are many quasi-governmental units that cover regional areas of the country. Exhibit L summarizes all of the potential change mechanisms which have been identified and categorizes them by the level of government to which they apply.

To analyze the potential change mechanisms in light of PL-94-168, it is important that the term effective be clearly defined. For the purposes of this study we have defined an effective change mechanism as one that allows an industry to voluntarily execute a metric conversion program with a minimum of delays or trauma caused by legislative and regulatory measurement sensitive issues. A review of Exhibit G shows that many potential deterrents exist at all levels of Federal and state laws and regulations. These deterrents take the form of tax rates, standards, and limits, most of which are expressed in even numbers using customary measurement units such as feet or miles. None of these represent barriers to the introduction of metric sizes in a particular industry. However, as an industry goes through the process of hard conversion and attempts to incorporate new rational sizes based on liters, kilometers, metric tons, etc., they will be faced with an extensive and burdensome conversion process and dual labeling process. This will be required to meet the existing reporting requirements, standards, and limitations as expressed in laws and regulations. If a sector conversion program is to proceed voluntarily on a reasonable timetable, an effective change mechanism must be established. The existing mechanisms are not adequate to support the voluntary conversion concept outlined in PL 94-168.

# DIRECTORY OF INTERSTATE AGENCIES

Arkansas River Compact Administration .....	
Atlantic States Marine Fisheries Commission .....	
Bear River Commission .....	
Bi-State Development Agency .....	
Breaks Interstate Park Commission .....	
Canadian River Commission .....	
Connecticut River Valley Flood Control Commission .....	
Costilla Creek Compact Commission .....	
Delaware River and Port Authority .....	
Delaware River Basin Commission .....	
Delaware River Joint Toll Bridge Commission .....	
Delaware River Port Authority .....	
Delaware Valley Regional Planning Commission .....	
Education Commission of the States .....	
Falls of the Ohio Interstate Park Commission .....	
Great Lakes Commission .....	
Gulf States Marine Fisheries Commission .....	
Interstate Commission on the Potomac River Basin .....	
Interstate Mining Compact Commission .....	
Interstate Oil Compact Commission .....	
Interstate Pest Control Compact .....	
Interstate Sanitation Commission .....	
Kansas City Area Transportation Authority .....	
Kansas-Nebraska Big Blue River Compact Administration .....	
Kansas-Oklahoma Arkansas River Commission .....	
Klamath River Compact Commission .....	
Lake Champlain Bridge Commission .....	
La Plata River Compact Commission .....	
Maine-New Hampshire Interstate Bridge Authority .....	
Merrimack River Valley Flood Control Commission .....	
Minnesota-Wisconsin Boundary Area Commission .....	
Multistate Tax Commission .....	
New England Higher Education Compact .....	
New England Interstate Water Pollution Control Commission .....	
Northeastern Forest Fire Protection Commission .....	
Ohio River Valley Water Sanitation Commission .....	
Pacific Marine Fisheries Commission .....	
Palisades Interstate Park Commission .....	
Pecos River Commission .....	
The Port Authority of New York and New Jersey .....	
Republican River Compact Administration .....	
Sabine River Compact Administration .....	
South Central Interstate Forest Fire Protection Compact Commission .....	
Southeastern States Forest Fire Compact Commission .....	
*Southern Growth Policies Board .....	
Southern Interstate Nuclear Board .....	
Southern Regional Education Board .....	
Tahoe Regional Planning Agency .....	
Tennessee-Tombigbee Waterway Development Authority .....	
Thames River Valley Flood Control Commission .....	
Tri-State Regional Planning Commission .....	
Upper Colorado River Commission .....	
Wabash Valley Interstate Commission .....	
Washington Metropolitan Area Transit Authority .....	
Washington Metropolitan Area Transit Commission .....	
Waterfront Commission Compact .....	
*Western Governors' Regional Energy Policy Office .....	
Western Interstate Commission for Higher Education .....	
Western Interstate Nuclear Board .....	
*Western State Water Council .....	
Yellowstone River Compact Commission .....	

\*Interstate agreement.

## LEGAL AND REGULATORY CHANGE MECHANISMS

Category	LEGISLATIVE AUTHORITY			
	Federal	State	Local	Other*
Legislative	<ul style="list-style-type: none"> <li>• omnibus bill</li> <li>• specialized bills</li> <li>• Metric Conversion Plan Act</li> <li>• Uniform Metric System Procedures Act</li> </ul>	<ul style="list-style-type: none"> <li>• omnibus laws</li> <li>• model topical laws</li> <li>• soft conversion laws</li> <li>• comprehensive laws</li> <li>• Uniform Metric System Procedures Act</li> </ul>	<ul style="list-style-type: none"> <li>• ordinance change</li> <li>• codification of ordinances</li> <li>• model ordinances</li> </ul>	<ul style="list-style-type: none"> <li>• changes to enabling legislation</li> </ul>
Administrative & Executive	<ul style="list-style-type: none"> <li>• Changes to CFRs</li> <li>• Changes to procurement regulations</li> <li>• Delegation to USMB</li> <li>• Executive Order</li> <li>• ICMP</li> <li>• U.S. Attorney General Opinion on 1866 Act</li> </ul>	<ul style="list-style-type: none"> <li>• model state regulations</li> <li>• delegation to administrative agencies</li> <li>• Executive Orders</li> <li>• State Attorney's General Opinions on Method of Sale Laws</li> </ul>	<ul style="list-style-type: none"> <li>• municipal regulations</li> <li>• Executive Order</li> </ul>	<ul style="list-style-type: none"> <li>• delegation to administrative agency</li> </ul>
Judicial	<ul style="list-style-type: none"> <li>• Federal Court test case of 1866 Act</li> </ul>	<ul style="list-style-type: none"> <li>• State court tests of method of sale laws</li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>

\* Port Authorities  
Bridge Authorities  
ETC

## VI. THE VARIOUS MECHANISMS CAN BE COMBINED IN ALTERNATIVE CHANGE OPTIONS

The legislative and regulatory environment within the United States presents a very complex structure and, thus, many of the individual mechanisms identified in Chapter V cannot be effective by themselves. However, it is appropriate to combine the various mechanisms into alternative change options which the U.S. Metric Board can consider. Each of the options presented below provides a varying level of effectiveness with which to accommodate U.S. metric conversion. Effectiveness, as it is used in this context, indicates the ease with which the various state, local, and Federal laws and regulations can be changed to accommodate a voluntary metric program. The options are presented from the most effective to the least effective.

### A. OPTION 1

Option 1, which is considered to be most effective in terms of the ease with which it accommodates voluntary metric change, is based on the adoption by Congress of a sector metric plan act. This would allow the U.S. Metric Board, to submit legislative changes to Congress. This option would require an amendment to PL 94-168 which would add language to section 6 to provide a mechanism whereby sector conversion plans, when submitted to the Metric Board, can provide the stimuli for comprehensive legislative and regulatory change. This mechanism would provide a vehicle such that the U.S. Metric Board, upon approval of a conversion plan containing appropriate legislative and regulatory changes at the the Federal government and state levels, would submit the plan to the 50 state legislatures, to Congress, and to affected Federal agencies. Congress in turn would have ninety days or some other specified period in which to respond to or veto these recommended changes. Assuming that it was not vetoed, the proposed legislation would become effective. This option is based on the approach presented by the American Bar Association in its testimony before Congress relative to the Metric Conversion Act. The text of the ABA's proposed legislation is included as Appendix J.

### B. OPTION 2

Option 2 is based on establishment of the sector metric plan act at only the Federal legislative level. This Federal change mechanism would be supplemented with a Federal version of the Uniform Metric System Procedures Act allowing for state administration of the Federal Act. This option would require Federal legislation adopting a change to PL 94-168 as described in Option 1. It would also require Federal legislation to adopt a version of the Uniform Metric System Procedures Act. This version would authorize the states to administer the Act within each state.

The advantage of this approach is that via Congressional action, only one enactment of the law would be required; however, by allowing for state administration of the Act, the autonomous role of the states is preserved. This approach to legislative and regulatory change has been very successful recently in environmental and energy programs and would lay to rest a number of technical questions concerning the power of certain state legislatures to regulate local lawmaking in home rule charter municipalities, to provide for temporary tax rates on a non-uniform basis geographically, etc.

C. OPTION 3

Under Option 3, the sector metric plan act would be adopted at the Federal level. However, this Federal change mechanism would not be supplemented by any formal mechanism at the state level. The states would be encouraged to adopt the Uniform Metric System Procedures Act on their own. This option would require all 50 states to adopt some version of the Uniform Metric System Procedures Act in order for them to accommodate metric change. This Option provides for the coordinated change of Federal laws, with individual states establishing autonomous change programs.

D. OPTION 4

Under Option 4, no Federal legislation would be proposed. Instead of an organized approach to changing Federal laws and regulations, they would be addressed on a case-by-case basis. Under this option, the primary vehicle for change would be to allow the states to adopt the Uniform Metric System Procedures Act and supplement that process with the promulgation of model state laws and regulations.

A table summarizing these options and showing comments on each is presented in Exhibit M. The key factors in determining the level of effectiveness of each option are the number of legislative actions required, the degree of consensus and uniformity provided, the timeliness of response to a voluntary program, and the degree of burden placed on industries or sectors initiating metric programs.

## EXHIBIT M

## SUMMARY OF OPTIONS

OPTION	APPROACH	COMMENTS
OPTION 1  • MOST EFFECTIVE	- AMEND PL 94-168 TO ALLOW FOR SECTOR METRIC PLANS EFFECTING LEGAL CHANGES AT BOTH FEDERAL AND STATE LEVEL	<ul style="list-style-type: none"> <li>• ONLY ONE LEGISLATIVE ACTION REQUIRED</li> <li>• FAVORED BY INDUSTRY</li> <li>• PROVIDES FOR CONSENSUS</li> <li>• PROVIDES FOR UNIFORMITY AT FEDERAL AND STATE LEVELS</li> <li>• RAISES FEDERAL PRE-EMPTION ISSUES</li> </ul>
OPTION 2  • EFFECTIVE	<ul style="list-style-type: none"> <li>- AMEND PL 94-168 TO ALLOW FOR SECTOR METRIC PLANS EFFECTING LEGAL CHANGES AT ONLY FEDERAL LEVEL.</li> <li>- CONGRESS ENACTS FEDERAL VERSION OF UNIFORM METRIC SYSTEM PROCEDURES ACT.</li> </ul>	<ul style="list-style-type: none"> <li>• ONE OR TWO LEGISLATIVE ACTIONS REQUIRED</li> <li>• ALLOWS FOR CONSENSUS AT FEDERAL AND STATE LEVEL</li> <li>• PROVIDES FOR UNIFORMITY AT STATE LEVEL</li> <li>• REDUCES FEDERAL PREEMPTION ISSUE</li> </ul>
OPTION 3  • LESS EFFECTIVE	<ul style="list-style-type: none"> <li>- AMEND PL 94-168 TO ALLOW FOR SECTOR METRIC PLANS EFFECTING LEGAL CHANGES AT ONLY FEDERAL LEVEL.</li> <li>- USMB ENCOURAGES STATE TO ADOPT UNIFORM METRIC SYSTEM PROCEDURES ACT.</li> </ul>	<ul style="list-style-type: none"> <li>• 51 LEGISLATIVE ACTIONS REQUIRED</li> <li>• ALLOWS FOR CONSENSUS AT FEDERAL LEVEL ONLY</li> <li>• NO UNIFORMITY AT STATE LEVEL</li> </ul>
OPTION 4  • LEAST EFFECTIVE	<ul style="list-style-type: none"> <li>- CASE BY CASE FEDERAL LEGISLATION.</li> <li>- USMB ENCOURAGES STATES TO ADOPT UNIFORM METRIC SYSTEM PROCEDURES ACT.</li> </ul>	<ul style="list-style-type: none"> <li>• UNLIMITED LEGISLATIVE ACTIONS REQUIRED</li> <li>• NO CONSENSUS</li> <li>• NO UNIFORMITY AT STATE LEVEL</li> </ul>



## VII. A RECOMMENDED STRATEGY FOR CHANGE

To assist the U.S. Metric Board with the overall problem of legislative and regulatory change, we have developed a recommended strategy for the Board. The strategy is described in the sections that follow. Section A discusses the overall strategy in general terms, and Section B provides detailed tasks for implementation of that strategy.

### A. OVERALL STRATEGY

For the past ten years those involved in metric conversion within the United States have looked for a source of strong leadership. Nowhere is this leadership more important and essential than in the area of legislative and regulatory change. The unique and complex U.S. legal structure, which we have discussed many times in this report, requires positive leadership if a voluntary metric program is to be effective. Without this leadership, the legislative changes will be accomplished in a haphazard, unorganized manner. If the intent of PL 94-168 is to be maintained and the various conversion programs allowed to progress on a voluntary basis, it is essential that the U.S. Metric Board provide this leadership in dealing with the many legal deterrents posed by state, municipal, and Federal laws. Regardless of the specific option ultimately selected by the U.S. Metric Board, it is important that the Board assume a leadership position in implementing that option, although that leadership role will vary substantially with the option selected.

As a second element of the overall strategy, it is important that once an option has been selected, the U.S. Metric Board make it clear to the Congress, Federal agencies, state governments, and sector committees exactly who is responsible for each aspect of legislative and regulatory change (i.e., consensus regarding metric sizes, establishing transition dates, drafting legislation, encouraging uniformity, etc.). If the selected option is to be implemented, it is essential that the roles of sector conversion groups, state governments, and Federal agencies be clearly identified.

### B. IMPLEMENTATION TASKS

To assist the Metric Board in implementing the recommended strategy, we have identified specific tasks to be accomplished during the implementation of this program. The tasks are presented briefly below, in the sequence that they should be accomplished. No attempt has been made to define a schedule or estimate the resources required to accomplish these tasks.

The primary tasks involved in implementation of an overall legislative and regulatory change program are:

- . The U.S. Metric Board should thoroughly consider the four options outlined in Chapter VI of this report, and then carefully select one option and commit to implementing that option.
- . Based on the option selected, the U.S. Metric Board should draft any Federal legislation required to implement that option. This legislation should be promptly submitted to Congress and every effort made to effect its passage.
- . The U.S. Metric Board should actively support state adoption of model legislation such as the Uniform Metric System Procedures Act. Regardless of the specific option selected, adoption of the UMSPA supports the overall metric conversion process. Every state that adopts a comprehensive legislative approach like the one outlined in the UMSPA facilitates the progress of voluntary conversion programs.
- . The U.S. Metric Board should review, coordinate, and actively support metric or dual measurement versions of model laws and regulations developed and promulgated by other organizations. To ensure the integrity of metric usage within these model laws and regulations, the USMB should perform a review and coordinating role with the various organizations developing these laws.
- . The U.S. Metric Board should provide guidance for Federal and state legislative bodies regarding the incorporation of metric and customary units in all new legislation. This guidance should be developed as quickly as possible to provide legislative drafting bodies with appropriate direction that may be incorporated in all new legislation. The use of this guidance in drafting laws that will be passed during the next few years will limit the extent to which laws need to be revised in the future to accommodate metric usage.
- . State governments are particularly interested in receiving positive guidance from the U.S. Metric Board regarding the appropriate use of metric units and the incorporation of metric units in legislative and regulatory materials. The U.S. Metric Board should provide direction and leadership to all of these state agencies in this crucial area. Without this leadership, the 50 states will have to deal with the various pressures of industry groups and other special interest groups. The result will be a lack of uniformity and lack of appropriate use of metric units in new laws.

## VIII. THE LEGAL ADVISORY PANEL

During preliminary discussions between MRC and the USMB, members of the Board expressed interest in ensuring that legal advice was available during the study. As a result of this discussion, MRC suggested the formation of a Legal Advisory Panel. The Board agreed with this approach, and thus MRC established the Advisory Panel.

### A. PANEL MEMBERSHIP

The Legal Advisory Panel consisted of the following five people:

Carl A. Auerbach, Esquire - Dean of the University of Minnesota Law School. Dean Auerbach has also served for many years on the Administrative Conference of the United States.

P. M. Fullinwider - Chief Administrator, Division of Weights and Measures, Arizona Department of Administration. Ms. Fullinwider is responsible for planning, organizing, and directing Arizona's weights and measures enforcement program.

The Honorable Norma Paulus - Secretary of State, State of Oregon. Formerly a member of the Oregon state legislature, Ms. Paulus is very knowledgeable in state legislative processes and in the administration of state regulations.

J. Phillip Richley - Mayor, City of Youngstown, Ohio. Formerly the Director of Ohio's Department of Transportation, Mayor Richley was responsible for pilot projects instituted in Ohio to design and implement highway construction projects using metric measurement units.

William E. Zeiter, Esquire - Morgan, Lewis, and Bockius. Mr. Zeiter is a recognized expert on the legal implications of metric change in the United States. He has also been the chairman of the Committee on Metric System in Commercial Transactions, Section of Corporation Banking and Business Law, American Bar Association; and Recorder, National Conference of Commissioners on Uniform State Laws - Uniform Metric System Act.

In addition to having experience in state, municipal, or county government, the five Panel members also represented:

- . Various geographic regions having a mixture of conditions that may impact on the nature and extent of legislation and regulation which may require metric conversion.
- . Varying regulatory and legislative environments to provide an understanding of the differences in governmental processes at the

State, municipal, and county levels that bring about legislative and regulatory changes.

- . Varying levels of experience in metric conversion.

#### B. ROLE OF THE PANEL

The Legal Advisory Panel was created to provide the U.S. Metric Board with a structured source of information, guidance, and practical expertise on planning and implementing legislative and regulatory changes at the state, municipal, and county levels.\* The Panel's activities were coordinated by the Newman & Hermanson Company, a Washington, D.C.-based consulting firm. The Newman & Hermanson Company established the Panel's operating procedures, organized and chaired the Panel meetings, and provided the panelists with a summary and analysis of the matters discussed at each meeting. MRC's role at the Panel meetings was to provide technical information and input from the study for the Panel to react to and interact with.

The three major functions of the Panel were as follows:

1. To critique the research design in order to: (a) insure broad input to the research design; and (b) identify additional sources of data.
2. To critique Middlesex Research Center's (MRC's) analyses in order to: (a) identify the advantages and the disadvantages of approaches identified in the analyses; and (b) trigger discussion of specific legislative and regulatory problems associated with metric conversion.
3. To critique the recommendations presented by MRC in order to supplement the analysis and to provide additional views on the advantages and disadvantages of each alternative approach.

#### Conference Call - February 1979

In January 1979, MRC sent each Panel member a notebook containing a variety of reference materials pertaining to metric conversion and to MRC's study, including:

- . MRC's Framework for Analysis.
- . The Metric Conversion Act of 1975.

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\*The Interagency Committee on Metric Policy provided expertise in legislation and regulation at the Federal level via the Metric Operating Subcommittee.

- . Background information on metrication prepared by the U.S. Metric Board.
- . Draft Uniform Metric System Act and the Florida Metric Plan.
- . The Department of Commerce report, A Metric America: A Decision Whose Time Has Come.

After reviewing the notebook materials, the Panel members participated in a conference call with the MRC project director to discuss the research design.

The first issue for discussion was the questionnaire which MRC had designed and planned to disseminate as a means of gathering information relative to the status of metric conversion in various public and private organizations. While the Panel generally agreed that the questionnaire touched most of the resources pertinent to the study, they suggested that it was also important to consider the Canadian experience in metrication.

Prior to the conference call, the Panel had also been asked to consider how MRC could best identify the legal barriers that might exist as impediments to metrication. The Panel initially suggested that the American National Metric Council Sector Committees would be a valuable resource in this area, provided that MRC could verify that the information derived from the Committees was based on factual, not hypothetical, situations. As an alternative approach, the Panel suggested that MRC could research a representative sampling of Federal, state, and local legislation; Secretary Paulus indicated that she had already commissioned a study to determine whether any barriers to metrication exist in Oregon legislation covering agriculture, transportation, and weights and measures. It was also noted that in addition to searching existing legislation, MRC should monitor on-going legislative efforts and reactions to these efforts with regard to metrication.

A third point of discussion during the conference call revolved around what information MRC needed to gather about state and local legislative processes in order to make recommendations about strategies to effect regulatory change. The Panel suggested that it would be important to collect information in the following areas:

- . Selected types of activities in the marketplace, such as construction, transportation of goods, and retail disbursing of gasoline. Since the system is not monolithic, it would be important to accumulate data on specific cases.
- . The extent to which home rule provisions at the local government level would impact the process of change.
- . The extent to which state laws have been codified and computerized.

As a final item for the Panel members' comments, the Panel was asked to suggest examples of pervasive change that might be comparable to the change processes associated with metrication. Two such examples were changes in a country's official language requirements (which, of course, has not happened in this country to any great extent) and, more pertinent to the United States, the changes brought about as a result of the Civil Rights Movement.

#### Legal Advisory Panel Meeting - May 1979

The Legal Advisory Panel met in Washington, D.C. on May 1, 1979, to review MRC's research to date and to have a full and frank exchange of views on the MRC research. Specific emphasis was placed on the following issues:

- . Does metric conversion require an effective change mechanism?
- . What change mechanisms exist?
- . Can the mechanisms be combined in alternative change strategies?

The Panel and MRC agreed that the issue of the study was not whether there should or should not be metric conversion, but rather if and when conversion is to take place and what structural mechanisms might be necessary. MRC indicated that the criteria that it was using to determine the need for structural mechanisms were as follows:

- . The need for a mechanism exists where there is a law or regulation that prohibits the use of metric units; this constitutes a legal barrier to conversion.
- . The need for a mechanism exists where there are laws or regulations that make it costly, cumbersome, or otherwise difficult to convert to metric units; these are legal deterrents to conversion.

Legal barriers and deterrents to metric conversion may exist at all levels of government. However, since not every existing legal barrier or deterrent would be applicable to every sector and type of industry, the Panel advised MRC to develop a series of matrices identifying the appropriate "problem areas" for various specified groups. The Panel also suggested that these matrices be combined into an "overview" matrix. These matrices would then be used as reference points and guidelines while MRC developed, and the Panel reviewed, conversion strategies for the various sectors and types of industry.

In discussing the ultimate contents of MRC's final report to the Metric Board, the Panel advised MRC to:

- . Discuss the difficulty of dealing with the two different concepts of conversion ("soft" and "hard" change). MRC did not address this issue since it has been discussed extensively in other metric reports.

- . Consider the authority and responsibility for initiating and implementing laws and regulations at all levels.
- . Provide an understanding of the system of promulgating laws and regulations and the legislative and regulatory structure.
- . Provide an understanding of how the units of measurement are used in laws and regulations.
- . Define and distinguish between true legal barriers to metrication and psychological, emotional, or economic barriers.
- . Investigate the existence of legal "nuisances" and legal facilitators.

The Panel also advised MRC to include a discussion of all the alternatives relative to mechanisms for change, even those that appeared to be unrealistic, in order to avoid criticism of the report on the basis that all possible alternatives were not duly considered.

MRC noted that it envisioned a combination of the mechanisms into strategies, such as Federal, state, and sector strategies, and possibly a regional strategy. A Panel member commented that there were several ways to couch the strategic approach. These would include a total Congressional approach, requiring legislative requirements for change; a modest Congressional approach, giving legislative support and direction for change; an incentive legislative approach, providing incentives of various sorts, including financial, to bring about change; and no legislative action. The Panel agreed that short of legislative change, financial incentives and publicity from the Metric Board would do much to overcome perceived deterrents to metrication.

#### Legal Advisory Panel Meeting - June 1979

The final meeting of the Legal Advisory Panel was held on June 20, 1979, in Boston, Massachusetts. In initial comments relating to the legal distinctions discussed at the May meeting, the Panel members suggested that there may not be a need to distinguish between legal deterrents and legal nuisances. Further, neither MRC nor the Panel had identified any legal barriers, so there was general consensus that most of the difficulties regarding metrication lay in the category of legal deterrents.

Prior to the meeting, the Panel members had received copies of MRC's first draft of the final report to the Metric Board. The focus of the meeting was on identifying the advantages and disadvantages of the change mechanisms and strategies contained in the report. The major suggestions made during the meeting were as follows:

- . As a compromise between the national control of metric conversion and haphazard state conversion, the U.S. Metric Board could certify state metric conversion plans.

- . MRC's state and Federal strategies should not be presented as simple "either/or" alternatives.
- . An Omnibus Bill would not work, in large part because of Congressional committee jurisdictions. However, an alternative would be to have conversion plans submitted to the Congressional committee having jurisdiction over the sector being converted.
- . Two alternative strategies exist with regard to new legislation; i.e, drafters may be instructed to use only metric, or to use a dual system.
- . The Panel was divided on whether or not a sector approach to metrication would confuse consumers. There was also discussion, but not consensus, about the problems that would arise when two sectors had responsibility for a product, and one agreed to metric conversion while the other did not.
- . A Federal Metric Conversion Plan Act could be designed whereby sector metric conversion plans would be submitted to the U.S. Metric Board, with concurrences from various interest groups. Two approaches to the initiation of such plans were discussed; in both approaches, the approved plans would have the status of law.
- . Approaches that might be considered for handling conversion at the state level included omnibus legislation, topical model laws, comprehensive legislation, and codification of existing legislation and regulations.
- . The approaches that were considered for conversion at the municipal level included ordinances, codification, and model codes.
- . The Panel declined to approve a suggestion that conversion could be accomplished during the annual review and update of the Code of Federal regulations, because the review and update process is not intended as a vehicle for substantive change.

Finally, the Panel suggested that MRC's analytical approach should answer the following questions:

- . Is there a need for metric conversion? (MRC determined this to be beyond the scope of the study)
- . Which mechanisms for change are now available?
- . Of those available, which are effective?
- . Of those available, which need alterations in order to be effective? What kinds of alterations?
- . Which mechanisms for change would be feasible?



## IX. DATA COLLECTION METHODOLOGY

Our approach to collecting data to support this study was structured in two phases. The first phase dealt with basic research, and the second addressed computerized searches of Federal and state legislation. Each of these phases is discussed in the following paragraphs, and summaries of the data collected are provided.

### A. BASIC RESEARCH

At the onset of the study, little information was available regarding the current knowledge of measurement units with respect to legislation and regulation. Thus, MRC's initial activities included an extensive amount of basic research to determine the existence of data to support our analysis. This basic research consisted of contacting various organizations that logically would have been involved in data collection or analysis activities related to our study. The primary elements of our basic research are described in the following paragraphs.

- . Since the American National Metric Council had been actively involved in metric conversion activities for a number of years, our initial contact was with ANMC. We submitted letters to each of the ANMC coordinating committees and sector committees. In this letter we outlined the purpose of our study and asked if, in the process of conducting metric sector planning activities, they had uncovered any relevant data or issues which would be helpful in our study. While many of the sector committees were quite supportive and provided copies of their conversion plans, the consensus was that they had not conducted any activities that were directly relevant to the issue of metric conversion and legislative and regulatory change.
- . A second source of primary information was the Federal agencies. Our interest in the agencies was to determine the exact status of Federal level metric conversion planning and to determine if they had conducted any analysis of Federal laws or regulations. To facilitate contacting the Federal agencies, we obtained a list of Metric Operating Subcommittee members and a list of the members of the Interagency Committee on Metric Policy. Letters were sent to each agency soliciting copies of metric policies and requesting information relative to our study.

A list of agency contacts for the CFR's was developed and letters were sent to each agency requesting the status of metric units within the CFR's. A summary of CFR metric use is shown in Exhibit N.

- . In an attempt to determine if professional organizations or societies had conducted any studies or collected data relevant to our study, a number of these organizations were contacted by mail.

Exhibit O identifies the organizations that we contacted and their responsiveness to our questions. As a result of these contacts, it was determined that no data was available which would support the analysis of measurement units in regard to legislation and regulation. While many of these organizations expressed interest in our study, none of them had established any data upon which we could draw.

- . In an attempt to solicit ideas from state governments, letters were addressed to each State Governor and the Attorneys General in each state. These letters briefly outlined the intent of our study and indicated that we would welcome any materials which they might consider helpful in the conduct of our study. A number of states responded with copies of metric related legislation, drafts of metric conversion plans, and lists of metric advisory committee members. This information provided invaluable assistance in establishing initial contacts with those states that had actively been involved in metric conversion planning. Exhibit P provides a list of Governor and Attorney General contacts developed in the course of our study.
- . To determine the impact of metric change on municipal ordinances, four cities were contacted:
  - . Dallas, Texas
  - . Kalamazoo, Michigan
  - . Seattle, Washington
  - . El Segundo, California

#### B. COMPUTER SEARCHES

During our study it was determined that the U.S. Code and selected sections of the CFRs could be searched, using a key word methodology, to determine the extent to which customary measurement units were imbedded in legislation. In addition, it was determined that one or two lines of text surrounding the measurement unit citation could be printed so that the context or use of the measurement unit could be determined by scanning the material. As a result, computerized searches were run for the following Federal level documents:

- . U.S. Constitution
- . U.S. Code
- . Armed Services Procurement Regulations
- . CFR's 33 and 40

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**A13**  $\mathbb{Q}$   
 (1)  $\mathbb{Z}$ ,  $\mathbb{Q}$ ,  $\mathbb{R}$

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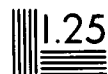
2.5

2.2



2.0

1.8



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Resolution: 1.0 to 2.8 line pairs/mm

Subsequently it was discovered that a number of state legislatures had their statutes on a similarly computerized data base. Sixteen states responded with computerized searches of their legislation. Unfortunately, not all of the searches were provided in a uniform format and, thus, not all of them could be used in the study. Some of the computer searches provided full text descriptors so that the context of measurement unit usage could be determined. (A sample of one of these searches is provided as Appendix H to the report; this is the State of Colorado computerized search). In contrast, some states only provided the number of times a measurement unit was used or a citation count. An example of this type of computerized output, from the State of Oklahoma, is provided in Appendix I. A summary of the state computer searches utilized in the study is provided in Exhibit Q, which also identifies the sixteen states which provided computerized output for us.

In each case, uniform search criteria were established to determine all of the customary units that might potentially be imbedded in legislation or regulations. A listing of the search criteria used is shown in Exhibit R.

## EXHIBIT N

## CFR METRIC USE

<u>Titles</u>	<u>Metric</u>
CFR Title 45, Part 22 (Foreign Relations)	No
Chapter III, Peace Corps	No
CFR Title 22: Parts 1200, 1201 through 1232 (Reserved), ACTION	No
1 CFR Chapter III	No
36 CFR Part 800	No
Title 41, Chapter 7	No
Title 22, Chapter 2	No
36 CFR, Chapter IV	No
14 CFR, Parts 200 to 1199	No
Title 41, Chapter 13	No
45 CFR VII	No
Title 45, Chapter X	No
16 CFR Chapter II	Yes
37 CFR 301 (PL 94-553)	No
4 CFR Chapter 3	No
Title 32, Parts 40-399, Chapter 1 (OSD)	Yes
32 CFR National Defense	No
Chapter XVIII Defense Civil Preparedness Agency	No
50 CFR Chapter VIII	No
12 CFR Parts 600-619	No
All FCC Rules	Yes
Title 12, Chapter V	No
Title 46, Chapter 4	No
9 CFR Chapter XII (Federal Mediation)	No
Title 12, Chapter 2	No

## EXHIBIT N-CONT.

<u>Titles</u>	<u>Metric</u>
16 CFR, Chapter I, Parts 0-999	No
Title 45 CFR, Subtitle B, Chapter I, Parts 100-199	No
42 CFR, Chapter IV 405.1134; 442.325; 442.447	Minor
45 CFR, Chapter XIV	No
Title 24, Subtitles A & B	No
19 CFR Chapter II	No
20 CFR, Chapters 1,4,5,6,7	Yes
29 CFR Subtitle A	Yes
29 CFR, Chapter 5	Yes
29 CFR, Chapter 17	Yes
29 CFR, Chapter 25	Yes
30 CFR, Chapter 1	Yes
41 CFR, Chapters 50 and 60	Yes
36 CFR, Chapter VII (Library of Congress)	Yes
37 CFR, Chapter II (Copyright Office, Library of Congress)	Yes
Title 46, Part 200 to End	No
Title 32A, Chapter XVIII	No
Title 32A, Chapter XIX	No
Title 32A, Chapter VII	No
Title 45, Chapter XI	No
29 CFR 100 (Employee Responsibilities and Conduct)	No
29 CFR 101 (Statements of Procedure-NLRB)	No
29 CFR 102 (NLRB Rules and Regulations)	No
29 CFR 103 (Other Rules - NLRB)	No
29 CFR 201 (Description of Organization-NLRB)	No

## EXHIBIT N-CONT.

<u>Titles</u>	<u>Metric</u>
29 CFR Chapter X	No
45 CFR, Chapter 6	No
41 CFR, Chapter 25	No
Title 25	No
10 CFR	Dual
Title 49, Chapter 14	No
Title 22, Chapter VII	No
Title 35	Yes
Title 36, Part 900	No
Title 29, Chapter XXVI	No
1 CFR 475 (Privacy Act)	No
39 CFR, Chapter 1	No
Title 20, Chapter II	No
32 CFR, Subchapter A, Parts 1450-1499	No
17 CFR (Commodity and Securities Exchanges)	No
41 CFR, Chapters 1 and 2; Chapter 101 to End (Public Contracts, Property Management)	No
32 CFR, Chapters XVI and XVII	No
CFR Title 13, Chapter I	No
20 CFR, Chapter III	Yes
45 CFR, Chapter II	Yes
Title 18, Chapter 8	No
18 CFR, Chapter 2 (Parts 300-306)	No
10 CFR 50 Appendix B	No
40 CFR Part 150 (Partial)	No
CFR 14	No
CFR 49	No



EXHIBIT N-CONT.

<u>Titles</u>	<u>Metric</u>
Title 41, Chapter 8	No
Title 38 (Parts 4 and 17 metric)	No
Title 41, Chapter 1	No

## EXHIBIT 0

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	<u>Response</u>
U.S. Conference of Mayors	NO
National League of Cities	YES
National Governors Association	YES
National Conference on Weights and Measures, NBS	YES
National Conference of State Legislatures	YES
National Conference of Commissioners on Uniform State Laws	YES
National Conference of States on Building Codes and Standards	YES
National Association of State Departments of Agriculture	NO
National Association of Regulatory Utility Commissioners	YES
National Association of Counties	NO
International City Management Association	YES
Building Officials and Code Officials International	NO
Council of State Governments	YES
American Public Works Association	NO
American Association of State Highway and Transportation Officials	YES
American Association of Motor Vehicle Administrators	YES
American National Metric Council	YES
National Association of Attorneys General	NO

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COMPUTERIZED STATE LEGISLATIVE SEARCHES

	<u>Citations + Text</u>	<u>Citations Only</u>
Colorado	X	
Florida		X
Iowa		X
Kansas	X	
Kentucky	X	
Mississippi	X	
Montana	X	
New York		X
North Dakota		X
Oklahoma		X
Pennsylvania		X
South Dakota		X
Texas		X
Virginia	X	
Washington		X
West Virginia	X	
Totals	<hr/> 7	<hr/> 9

\*Also provided data on rules

## EXHIBIT R

SEARCH CRITERIA

Inch(es)	Acre-foot	Degrees Fahrenheit
Cubic inches	Acreage	Degrees F
Square inches	Ounce(s)	Degrees Rankine
Foot	Oz(s)	Degrees Centigrade
Feet	Pound(s) (but not animal pounds)	Degrees C
Cubic feet	Poundage	Angstrom
Square feet	Lb(s)	Atmosphere(s) (i.e., pressure)
Yard(s) (but not Navy Yards or Naval Yards or Yardmen)	Ton(s)	Atmospheric (i.e., pressure)
Cubic yards	Short Ton(s)	Bar (i.e., pressure)
Square yards	Tonnage	B.T.U.
Mile(s)	Hundredweight	BTU(s) or btu(s)
Square miles	Grains (but not as it refers to crops, coins, or explosives)	British thermal unit(s)
Nautical mile(s)	Tablespoon(s)	Caliber
Statute mile(s)	Teaspoon(s)	Carat
Mileage	Cup(s)	Centipoise
Rod(s)	Pint(s)	Poise
Chain(s)	Quart(s)	Footcandle(s)
Link(s)	Gallon(s)	Footlambert(s)
Perches	Gallonage	Horsepower
Poles	Gill	HP or hp
Marine League(s)	Barrel(s)	H.P.
Fathom	Bushel(s)	Lambert
Knot(s)	Peck(s)	Mil(s)
Acre(s)	Fluidounce	Pica(s)
Acre-feet		

Search Criteria - Page 2 of 2

Point (but only as it  
refers to typesetting)

Slug(s) (not bugs but mass)

Stoke(s)

Centistoke(s)

Section(s) (only as it  
refers to land area)

Bale(s)

Minutes (angles only)

Seconds (angles only)

Degrees(angles only)

Board foot

Board feet

Poundal(s)

Cord(s)

Kip(s)

PSI or psi

KSI or ksi

Curie

Oersted

Gauss

Maxwell

MHO

Roentgen

Decibel

## X. EXPERIENCES OF OTHER COUNTRIES

Over the past fifteen years, three major English-speaking countries have initiated the process of metric conversion. These three countries are Australia, Great Britain, and Canada. In an attempt to learn from the experiences of these countries, MRC examined various aspects of their metric conversion programs. Our analysis indicated that the British program experienced substantial difficulties and probably did not provide a good model for comparisons with the United States. In contrast, the Australian and Canadian programs have been successful and offered some positive experiences for the U.S. program.

### A. AUSTRALIA

The Australian metric conversion program was initiated in June of 1970 with the Metric Conversion Act, which provided for the establishment of a metric conversion board with some similarities to the United States program. Australia has a Federal and State governmental system, with each of the six states being a sovereign state in its own right. Thus, in Australia it was necessary to effect changes in legislation within each of the six states in addition to the Federal government legislative changes.

In April 1979, Mr. A. F. A. Harper, Executive Member of the Metric Conversion Board, addressed the U.S. Metric Board with a report on metric conversion in Australia. The initial section of his report is presented in the following paragraph with selected quotations from other sections of his report which are applicable to the U.S. metric conversion legislative and regulatory issues.

"This report aims to summarise the principal events leading to metric conversion in Australia and the rationale and logistics of the change. Some of the lessons learned and conclusions reached from Australia's experiences are reviewed and the plans for bringing the operation to a successful conclusion are outlined."

"The pledged support of the Federal and State governments was seen as a crucial element in the implementation of many of the conversion programs."

"Legislation. As with standards the logistics of amendment should as far as possible not introduce an unnecessary delay in conversion."

"In amending legislation several States found it convenient to enact a provision whereby any legislation, whether an act or regulations, may by regulation have values in imperial units expressed in metric ones and that in doing so the actual value may be varied by up to  $\pm 12.5\%$  in order to obtain a rounded metric quantity. In one State this power was only available for 12 months which expedited the identification and amendment of the legislation. As mentioned earlier the

general principle was adopted of relaxing controls in making the change. In States where amendment by regulation was not provided some acts were amended individually, but in most cases amendments were made by omnibus bills."

"A recent problem in some States has been the incompatibility of goods sold by measurement in the presence of the customer being weighed in grams, while still being ticketed and advertised per pound. This has arisen because of delays of the introduction of legislation to require wholly metric trading practices. The consequent confusion to customers has tended to be blamed on metric conversion rather than the failure to adopt proper metric trading. Such confusion has even been used as an argument for slowing down the change by some who have failed to recognise that a faster, better co-ordinated change would have entirely eliminated the confusion that has already occurred in the majority of States."

"Packers largely followed the Board's recommendation that they avoid dual marking and applied the metric marking only when the new "metric pack" was introduced. As the change was usually to 10% greater content (e.g. 500 g replacing 1 lb (454 g)) associated savings in unit package costs facilitated the maintenance of the pro-rata price."

"Metrication has provided the opportunity for adopting many striking rationalisations and improvements but the most notable was the adoption of a national uniform building code. There are many others such as rationalisations in food and drink container sizes, in builders' hardware, in steel beams and sections and in horticultural packaging."

"Goods described by weight or measure include real estate, furniture and household utensils. About 60% of such descriptions are given in metric units although many of these are in dual units. To provide uniform price comparisons it has been recommended by manufacturers and retailers that it be made mandatory that such descriptions be in metric units in all offers for sale including advertisements for specified types of goods, property and service. In general sole metric descriptions would be required after a period when both were permitted."

"Steps have been taken to remove a considerable number of units outside Australia's metric system from the prescribed list of Commonwealth legal units. Included in the units to be removed are the barrel, bushel, pound force, and pound per square inch. It is envisaged others will be removed progressively so that ultimately the metric system will indeed be the sole system of measurement in Australia."

#### B. CANADA

The Canadian metric conversion program commenced with the appointment of the metric commission in 1972, following the recommendations of the 1970

white paper on metric conversion. One aspect of planning conducted by Metric Commission Canada involved an analysis of measurement sensitive clauses in acts and regulations. As a result of this analysis, 1,478 measurement sensitive clauses were identified in legislative acts and 4,146 measurement sensitive clauses were identified in regulations within the Federal government. Exhibit S summarizes the results of this analysis, which was presented in 1974.

Similar measurement sensitive clauses were found to exist in each of the Canadian provinces, and these have been dealt with over the past years by changes to laws as appropriate. The Canadian Parliament has addressed the measurement sensitive clauses identified through a series of omnibus legislation as represented by S-10, presented as Appendix D to this report. In general, Canadian experience has been one of maximum coordination between the Provincial Governments, Metric Commission Canada, and the Parliament. Thus, changes in legislation required to accommodate new metric measurement units have been accomplished without incident for the most part.

Department  
of Industry, Trade  
and Commerce

Ministère  
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EXHIBIT S

Ottawa, Canada  
K1A 0H5

File No./Dossier

OST 9000-230/J58

INTERDEPARTMENTAL COMMITTEE

FOR

January 30, 1974.

METRIC CONVERSION

To: All Members

From: H.I. King, Secretary

Subject: Report on Analysis of Measurement Sensitive Clauses  
in Acts and Regulations

Analysis by the Secretariat of the measurement sensitive clauses in Acts and Regulations is now complete with the exception only of the Regulations administered by the Canadian Transport Association and by the Canadian Marine Transport Administration within the Ministry of Transport. These two exceptions contain a large number of measurement sensitive clauses.

Measurement sensitive clauses have been classified into one of five types as follows:

- A - Clauses which prohibit the use of SI units and which must be amended to remove legal obstacles to metric conversion.
- B - Clauses which, while not being prohibitive, could inhibit or inconvenience orderly metric conversion unless amended to SI units.
- C - Clauses which do not impede metric conversion but which should be reviewed from time to time for conformance to SI Usage.
- D - Clauses which are already expressed in SI terminology and which do not require amendment.
- E - Clauses which are in special categories other than A to D.

.../2

-2-

In the 94 Acts containing 1478 measurement sensitive clauses and the 224 Regulations containing 4146 measurement sensitive clauses the breakdown of types is as follows:

Type A clauses,	29 in Acts,	69 in Regulations
Type B clauses,	971 in Acts,	2471 in Regulations
Type C clauses,	440 in Acts,	1025 in Regulations
Type D clauses,	15 in Acts,	368 in Regulations
Type E clauses,	23 in Acts,	213 in Regulations
	<hr/>	<hr/>
	1478	4146
	<hr/>	<hr/>

5624

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Type E contains primarily clauses which make reference to standards and therefore may contain clauses which, in effect, are similar to type A clauses.

The analysis is complete (except as noted) to December 31, 1973. It is proposed that the Secretariat will monitor future legislation through the medium of the Canada Gazette and will provide all departments quarterly summaries of measurement sensitive clauses by types in a manner similar to the referenced report.

It is proposed that departments and agencies will be provided with the analyses pertinent to their department or agency and also that a consolidated list, together with quotations of type A clause, will be furnished to the Metric Commission.



H.I. King



APPENDIX A  
THE METRIC CONVERSION ACT OF 1975 (PL 94-168)

MIDDLESEX RESEARCH CENTER



Public Law 94-168  
94th Congress, H. R. 8674  
December 23, 1975

## An Act

To declare a national policy of coordinating the increasing use of the metric system in the United States, and to establish a United States Metric Board to coordinate the voluntary conversion to the metric system.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Metric Conversion Act of 1975".*

SEC. 2. The Congress finds as follows:

(1) The United States was an original signatory party to the 1875 Treaty of the Meter (20 Stat. 709), which established the General Conference of Weights and Measures, the International Committee of Weights and Measures and the International Bureau of Weights and Measures.

(2) Although the use of metric measurement standards in the United States has been authorized by law since 1866 (Act of July 28, 1866; 14 Stat. 339), this Nation today is the only industrially developed nation which has not established a national policy of committing itself and taking steps to facilitate conversion to the metric system.

SEC. 3. It is therefore declared that the policy of the United States shall be to coordinate and plan the increasing use of the metric system in the United States and to establish a United States Metric Board to coordinate the voluntary conversion to the metric system.

SEC. 4. As used in this Act, the term—

(1) "Board" means the United States Metric Board, established under section 5 of this Act;

(2) "engineering standard" means a standard which prescribes (A) a concise set of conditions and requirements that must be satisfied by a material, product, process, procedure, convention, or test method; and (B) the physical, functional, performance and/or conformance characteristics thereof;

(3) "international standard or recommendation" means an engineering standard or recommendation which is (A) formulated and promulgated by an international organization and (B) recommended for adoption by individual nations as a national standard; and

(4) "metric system of measurement" means the International System of Units as established by the General Conference of Weights and Measures in 1960 and as interpreted or modified for the United States by the Secretary of Commerce.

SEC. 5. (a) There is established, in accordance with this section, an independent instrumentality to be known as a United States Metric Board.

(b) The Board shall consist of 17 individuals, as follows:

(1) the Chairman, a qualified individual who shall be appointed by the President, by and with the advice and consent of the Senate;

(2) sixteen members who shall be appointed by the President, by and with the advice and consent of the Senate, on the following basis—

Metric Conversion Act of 1975,  
15 USC 205a note,  
15 USC 205a.

15 USC 205b.

Definitions,  
15 USC 205c.

United States Metric Board, Establishment,  
15 USC 205d, Membership.

(A) one to be selected from lists of qualified individuals recommended by engineers and organizations representative of engineering interests;

(B) one to be selected from lists of qualified individuals recommended by scientists, the scientific and technical community, and organizations representative of scientists and technicians;

(C) one to be selected from a list of qualified individuals recommended by the National Association of Manufacturers or its successor;

(D) one to be selected from lists of qualified individuals recommended by the United States Chamber of Commerce, or its successor, retailers, and other commercial organizations;

(E) two to be selected from lists of qualified individuals recommended by the American Federation of Labor and Congress of Industrial organizations or its successor, who are representative of workers directly affected by metric conversion, and by other organizations representing labor;

(F) one to be selected from a list of qualified individuals recommended by the National Governors Conference, the National Council of State Legislatures, and organizations representative of State and local government;

(G) two to be selected from lists of qualified individuals recommended by organizations representative of small business;

(H) one to be selected from lists of qualified individuals representative of the construction industry;

(I) one to be selected from a list of qualified individuals recommended by the National Conference on Weights and Measures and standards making organizations;

(J) one to be selected from lists of qualified individuals recommended by educators, the educational community, and organizations representative of educational interests; and

(K) four at large members to represent consumers and other interests deemed suitable by the President and who shall be qualified individuals.

Term of office.

As used in this subsection, each "list" shall include the names of at least three individuals for each applicable vacancy. The terms of office of the members of the Board first taking office shall expire as designated by the President at the time of nomination: five at the end of the 2d year; five at the end of the 4th year; and six at the end of the 6th year. The term of office of the Chairman of such Board shall be 6 years. Members, including the Chairman, may be appointed to an additional term of 6 years, in the same manner as the original appointment. Successors to members of such Board shall be appointed in the same manner as the original members and shall have terms of office expiring 6 years from the date of expiration of the terms for which their predecessors were appointed. Any individual appointed to fill a vacancy occurring prior to the expiration of any term of office shall be appointed for the remainder of that term. Beginning 45 days after the date of incorporation of the Board, six members of such Board shall constitute a quorum for the transaction of any function of the Board.

Quorum.

(c) Unless otherwise provided by the Congress, the Board shall have no compulsory powers.

(d) The Board shall cease to exist when the Congress, by law, determines that its mission has been accomplished.

Policy

Implementation, 15 USC 205e,

Sec. 6. It shall be the function of the Board to devise and carry out a broad program of planning, coordination, and public education, con-

istent with other national policy and interests, with the aim of implementing the policy set forth in this Act. In carrying out this program, the Board shall—

(1) consult with and take into account the interests, views, and conversion costs of United States commerce and industry, including small business; science; engineering; labor; education; consumers; government agencies at the Federal, State, and local level; nationally recognized standards developing and coordinating organizations; metric conversion planning and coordinating groups; and such other individuals or groups as are considered appropriate by the Board to the carrying out of the purposes of this Act. The Board shall take into account activities underway in the private and public sectors, so as not to duplicate unnecessarily such activities;

(2) provide for appropriate procedures whereby various groups, under the auspices of the Board, may formulate, and recommend or suggest, to the Board specific programs for coordinating conversion in each industry and segment thereof and specific dimensions and configurations in the metric system and in other measurements for general use. Such programs, dimensions, and configurations shall be consistent with (A) the needs, interests, and capabilities of manufacturers (large and small), suppliers, labor, consumers, educators, and other interested groups, and (B) the national interest;

(3) publicize, in an appropriate manner, proposed programs and provide an opportunity for interested groups or individuals to submit comments on such programs. At the request of interested parties, the Board, in its discretion, may hold hearings with regard to such programs. Such comments and hearings may be considered by the Board;

Comments  
and hearings.

(4) encourage activities of standardization organizations to develop or revise, as rapidly as practicable, engineering standards on a metric measurement basis, and to take advantage of opportunities to promote (A) rationalization or simplification of relationships, (B) improvements of design, (C) reduction of size variations, (D) increases in economy, and (E) where feasible, the efficient use of energy and the conservation of natural resources;

(5) encourage the retention, in new metric language standards, of those United States engineering designs, practices, and conventions that are internationally accepted or that embody superior technology;

(6) consult and cooperate with foreign governments, and inter-governmental organizations, in collaboration with the Department of State, and, through appropriate member bodies, with private international organizations, which are or become concerned with the encouragement and coordination of increased use of metric measurement units or engineering standards based on such units, or both. Such consultation shall include efforts, where appropriate, to gain international recognition for metric standards proposed by the United States, and, during the United States conversion, to encourage retention of equivalent customary units, usually by way of dual dimensions, in international standards or recommendations;

Consultation  
and coop-  
eration.

(7) assist the public through information and education programs, to become familiar with the meaning and applicability of metric terms and measures in daily life. Such programs shall include—

Public  
information  
and educa-  
tion programs.

(A) public information programs conducted by the Board, through the use of newspapers, magazines, radio, television, and other media, and through talks before appropriate citizens' groups, and trade and public organizations;

(B) counseling and consultation by the Secretary of Health, Education, and Welfare; the Secretary of Labor; the Administrator of the Small Business Administration; and the Director of the National Science Foundation, with educational associations, State and local educational agencies, labor education committees, apprentice training committees, and other interested groups, in order to assure (i) that the metric system of measurement is included in the curriculum of the Nation's educational institutions, and (ii) that teachers and other appropriate personnel are properly trained to teach the metric system of measurement;

(C) consultation by the Secretary of Commerce with the National Conference of Weights and Measures in order to assure that State and local weights and measures officials are (i) appropriately involved in metric conversion activities and (ii) assisted in their efforts to bring about timely amendments to weights and measures laws; and

(D) such other public information activities, by any Federal agency in support of this Act, as relate to the mission of such agency;

(8) collect, analyze, and publish information about the extent of usage of metric measurements; evaluate the costs and benefits of metric usage; and make efforts to minimize any adverse effects resulting from increasing metric usage;

(9) conduct research, including appropriate surveys; publish the results of such research; and recommend to the Congress and to the President such action as may be appropriate to deal with any unresolved problems, issues, and questions associated with metric conversion, or usage, such problems, issues, and questions may include, but are not limited to, the impact on workers (such as costs of tools and training) and on different occupations and industries, possible increased costs to consumers, the impact on society and the economy, effects on small business, the impact on the international trade position of the United States, the appropriateness of and methods for using procurement by the Federal Government as a means to effect conversion to the metric system, the proper conversion or transition period in particular sectors of society, and consequences for national defense;

(10) submit annually to the Congress and to the President a report on its activities. Each such report shall include a status report on the conversion process as well as projections for the conversion process. Such report may include recommendations covering any legislation or executive action needed to implement the the programs of conversion accepted by the Board. The Board may also submit such other reports and recommendations as it deems necessary; and

(11) submit to the Congress and to the President, not later than 1 year after the date of enactment of the Act making appropriations for carrying out this Act, a report on the need to provide an effective structural mechanism for converting customary units to metric units in statutes, regulations, and other laws at all levels of government, on a coordinated and timely basis, in response to voluntary conversion programs adopted and implemented by various sectors of society under the auspices and with the approval

Surveys,  
Recommendations to  
Congress and  
President.

Report to  
Congress and  
President.

Report to  
Congress and  
President.

of the Board. If the Board determines that such a need exists, such report shall include recommendations as to appropriate and effective means for establishing and implementing such a mechanism.

Sec. 7. In carrying out its duties under this Act, the Board may—

(1) establish an Executive Committee, and such other committees as it deems desirable;

(2) establish such committees and advisory panels as it deems necessary to work with the various sectors of the Nation's economy and with Federal and State governmental agencies in the development and implementation of detailed conversion plans for those sectors. The Board may reimburse, to the extent authorized by law, the members of such committees;

(3) conduct hearings at such times and places as it deems appropriate;

(4) enter into contracts, in accordance with the Federal Property and Administrative Services Act of 1949, as amended (40 U.S.C. 471 et seq.), with Federal or State agencies, private firms, institutions, and individuals for the conduct of research or surveys, the preparation of reports, and other activities necessary to the discharge of its duties;

(5) delegate to the Executive Director such authority as it deems advisable; and

(6) perform such other acts as may be necessary to carry out the duties prescribed by this Act.

Sec. 8. (a) The Board may accept, hold, administer, and utilize gifts, donations, and bequests of property, both real and personal, and personal services, for the purpose of aiding or facilitating the work of the Board. Gifts and bequests of money, and the proceeds from the sale of any other property received as gifts or bequests, shall be deposited in the Treasury in a separate fund and shall be disbursed upon order of the Board.

(b) For purpose of Federal income, estate, and gift taxation, property accepted under subsection (a) of this section shall be considered as a gift or bequest to or for the use of the United States.

(c) Upon the request of the Board, the Secretary of the Treasury may invest and reinvest, in securities of the United States, any moneys contained in the fund authorized in subsection (a) of this section. Income accruing from such securities, and from any other property accepted to the credit of such fund, shall be disbursed upon the order of the Board.

(d) Funds not expended by the Board as of the date when it ceases to exist, in accordance with section 5(d) of this Act, shall revert to the Treasury of the United States as of such date.

Sec. 9. Members of the Board who are not in the regular full-time employ of the United States shall, while attending meetings or conferences of the Board or while otherwise engaged in the business of the Board, be entitled to receive compensation at a rate not to exceed the daily rate currently being paid grade 18 of the General Schedule (under section 5332 of title 5, United States Code), including travel-time. While so serving, on the business of the Board away from their homes or regular places of business, members of the Board may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for persons employed intermittently in the Government service. Payments under this section shall not render members of the Board employees or officials of the United States for any purpose. Members of the Board who are in the employ of the United States shall be entitled to travel expenses when traveling on the business of the Board.

Committees,  
establishment,  
15 USC 205f.

Hearings.

Contracts.

Gifts and  
bequests.  
15 USC 205g.

Unexpended  
funds.

Compensation.  
15 USC 205h.

5 USC 5332  
note.  
Travel  
expenses.

Executive  
Director,  
appointment.  
15 USC 205i.

SEC. 10. (a) The Board shall appoint a qualified individual to serve as the Executive Director of the Board at the pleasure of the Board. The Executive Director, subject to the direction of the Board, shall be responsible to the Board and shall carry out the metric conversion program, pursuant to the provisions of this Act and the policies established by the Board.

5 USC 5101  
et seq.  
5 USC 5331.

(b) The Executive Director of the Board shall serve full time and be subject to the provisions of chapter 51 and subchapter III of chapter 53 of title 5, United States Code. The annual salary of the Executive Director shall not exceed level III of the Executive Schedule under section 5314 of such title.

(c) The Board may appoint and fix the compensation of such staff personnel as may be necessary to carry out the provisions of this Act in accordance with the provisions of chapter 51 and subchapter III of chapter 53 of title 5, United States Code.

Experts and  
consultants.

(d) The Board may (1) employ experts and consultants or organizations thereof, as authorized by section 3109 of title 5, United States Code; (2) compensate individuals so employed at rates not in excess of the rate currently being paid grade 18 of the General Schedule under section 5332 of such title, including traveltime; and (3) may allow such individuals, while away from their homes or regular places of business, travel expenses (including per diem in lieu of subsistence) as authorized by section 5703 of such title 5 for persons in the Government service employed intermittently: *Provided, however,* That contracts for such temporary employment may be renewed annually.

Financial  
and adminis-  
trative  
services.  
15 USC 205j.

SEC. 11. Financial and administrative services, including those related to budgeting, accounting, financial reporting, personnel, and procurement, and such other staff services as may be needed by the Board, may be obtained by the Board from the Secretary of Commerce or other appropriate sources in the Federal Government. Payment for such services shall be made by the Board, in advance or by reimbursement, from funds of the Board in such amounts as may be agreed upon by the Chairman of the Board and by the source of the services being rendered.

Appropriation  
authorization.  
15 USC 205k.

SEC. 12. There are authorized to be appropriated such sums as may be necessary to carry out the provisions of this Act. Appropriations to carry out the provisions of this Act may remain available for obligation and expenditure for such period or periods as may be specified in the Acts making such appropriations.

Approved December 23, 1975.

#### LEGISLATIVE HISTORY:

HOUSE REPORT No. 94-369 (Comm. on Science and Technology).

SENATE REPORT No. 94-500 (Comm. on Commerce).

CONGRESSIONAL RECORD, Vol. 121 (1975):

Sept. 5, considered and passed House.

Dec. 8, considered and passed Senate, amended, in lieu of S. 100.

Dec. 11, House concurred in Senate amendment.

WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 11, No. 52:

Dec. 23, Presidential statement.

89 STAT. 1012

APPENDIX B  
ICMP OPERATING CHARTER

MIDDLESEX RESEARCH CENTER



October 18, 1978

UNITED STATES METRIC BOARD

Charter of

The Interagency Committee on Metric Policy

Establishment

1. The Interagency Committee on Metric Policy (hereinafter the "Committee") is hereby established to advise the U.S. Metric Board and the Heads of Federal departments and agencies.
2. The Committee will be responsible to and report to the U.S. Metric Board.

Purpose and Scope

The purpose of the Committee is to coordinate and provide policy guidance regarding U.S. Government efforts to implement metric conversion, under the auspices of the United States Metric Board (established pursuant to the Metric Conversion Act of 1975). The objective of the Committee shall be to promote effective and consistent policies in metric conversion activities throughout the public and private sectors. The scope of the Committee's activities shall include, but not be limited to: standards; training, education and public information; weights and measures; consumer affairs; procurement; data collection; and Federal administrative procedures, as these relate to U.S. Government metric conversion activities.

Functions

The Committee, with respect to the internal operations

of the Federal Government and in order to facilitate U.S. Government and public conversion to metric, shall:

1. Collect and analyze data as appropriate;
2. Provide Executive Branch coordination with other activities of United States Metric Board, established by Section 5 of the Metric Conversion Act of 1975 (P.L. 94-168);
3. Prepare, as appropriate, recommended metric conversion plans and policies for the Federal Government in those areas where more than one Federal department or agency has a primary interest, such as transportation, consumer affairs, construction, procurement, weights and measures, and data collection;
4. Prepare, as appropriate, recommendations concerning the development of uniform Federal Government metrication policies, plans, and actions for interaction by Federal departments and agencies with private sector, State, and local government interests engaged in metric activities;
5. Seek to identify needs and actions to strengthen coordination among Federal departments and agencies in their metric conversion activities;
6. With the agreement of the departments and agencies concerned, endeavor to resolve differences among Federal departments and agencies serving on the Committee

regarding their implementation of metrication, when in the opinion of the Committee such differences are likely to inhibit efficient Federal Government or private sector conversion to metric or create conditions among people requiring Federal attention and assistance;

7. Take steps to eliminate unnecessary duplication of Federal metric activities with those which may be performed outside the Federal Government; and
8. Seek optimum harmony between the United States and other countries during the process of metric conversion.

#### Membership

1. The initial voting members of the Committee shall be:
  - A. Federal Departments  
(To be added.)
  - B. (Federal Agencies  
(To be added.)
2. The initial non-voting observer members of the Committee shall be:  
(To be added.)
3. Other Federal departments or agencies may become voting members or non-voting observer members of the Committee upon application to or by invitation from the Chairman, United States Metric Board.

4. In order to maximize the effectiveness of the Committee, it is necessary that voting representatives be responsible policy-making individuals at a relatively senior level. Accordingly, the Head of each Federal department serving on the Committee shall appoint a responsible official whose rank shall not be less than a "Level IV" of the Executive Schedule (5 U.S.C. 5312-15, 5317) to serve as the Federal department's metric policy official and representative on the Committee. At the discretion of the chair, the chair may approve a member chosen at a level other than that specified provided that the level is consistent with the overall intent of the Charter that each member be at the policy-making level. The Head of a Federal agency (i.e. ... not a full department) serving on the Committee shall appoint a representative whose rank shall be consistent with effective implementation of the objectives and functions of the Committee. The Head of each Federal department and agency serving on the Committee shall inform the Chairman of his or her appointed voting representative. Appointments to the Committee shall be for an indefinite term.
5. A Federal department or agency not wishing to participate as a voting member of the Committee may participate as a "non-voting observer." The Head of such department or

agency shall inform the Chairman of his or her appointed observer-representative. Observer appointments shall be for an indefinite term. There are no minimum grade level requirements for observers.

#### Administrative Provisions

1. The Chairman of the U.S. Metric Board will be Chairman of the Committee. In the event of his unavailability, he shall designate another member of the United States Metric Board to serve as Chairman.
2. Meetings of the Committee shall be conducted only when a quorum is present at the commencement thereof. One-third of the voting membership of the Committee shall constitute a quorum. The Committee shall meet not less than twice per each 12-month period.
3. Amendments to the Charter may be made upon approval of two-thirds of the Committee's voting membership at the time.
4. The Committee may establish an Executive Committee, subcommittees, and working groups as deemed appropriate. A Committee representative may bring experts from his Federal department or agency to Committee meetings to participate in discussions of particular items on the agenda. Upon receiving prior approval of the Chairman, Committee representatives may invite individuals who

are not employees of their Federal departments or agencies, including nongovernment consultants or observers, to participate in such discussions on an ad hoc basis.

5. The Committee may draft other administrative or operating procedures as necessary, consistent with its purpose and functions.
6. As may be necessary for carrying out the functions of this Committee, member departments and agencies shall cooperate fully in endeavoring to furnish appropriate assistance to the Committee.

#### Annual Report

The Committee shall submit a progress report to the U.S. Metric Board at 12-month intervals after its establishment. This report should summarize the Committee's activities during the previous 12-month period and include a description of all recommendations formulated by the Committee and actions taken in response to such recommendations during the period covered.

#### Duration

The Committee shall terminate when the Board determines that continuation of the Committee is not necessary.

Signed \_\_\_\_\_

Chairman,  
United States Metric Board

Date \_\_\_\_\_

APPENDIX C  
ICMP POLICY

June 11, 1979

## METRIC CONVERSION POLICY FOR FEDERAL AGENCIES

Purpose: The purpose is to state for Federal agencies a policy for the increasing use of the metric system within the Federal government.

Background: On July 28, 1866, the United States adopted the Use of the Metric System of Weights and Measures Act of 1866 (14 Stat. 339), which legalized the use of the metric system throughout the United States. On May 20, 1875, the United States signed the Treaty of the Meter (20 Stat. 709), which provided for an International Bureau of Weights and Measures, an International Committee of Weights and Measures, and for a General Conference on Weights and Measures. In recognition of the fact that the International System (SI), as defined by the General Conferences on Weights and Measures since 1960, has now become the uniform internationally accepted system for weights and measures, many sectors of the United States have already started metrification. On December 23, 1975, the President signed the Metric Conversion Act of 1975 (Public Law 94-168; 15 USC 205a), which (1) declared that the policy of the United States shall be to coordinate and plan the increasing use of the metric system in the United States, and (2) established the U.S. Metric Board to coordinate the voluntary conversion to the metric system.

Policy Statement: Federal agencies shall conduct their metrification activities in a coordinated manner consistent with the objectives of the Metric Conversion Act and compatible with metric conversion



June 11, 1979

-2-

trends in the nation. (Section 3 of the Act declares that the policy of the United States shall be to coordinate and plan the increasing use of the metric system in the United States.) Federal agencies shall encourage and support an environment which facilitates metrication. Each Federal agency shall develop plans, allocate sufficient resources, and take actions to:

1. actively undertake coordination and planning for metric conversion, taking into account the interests, views and conversion plans of other Federal agencies, states and affected parties in the private sector.
2. identify the areas where metrication is dependent upon the agency's initiative and take appropriate action.
3. identify the areas where metrication is dependent upon initiatives outside the agency which impact the agency and take appropriate action.
4. maximize benefits and minimize costs in areas impacted by the agency's program.
5. facilitate public understanding of, and participation in, metrication activities in agency programs.
6. identify problems associated with metrication activities in areas impacted by the agency's programs, and appropriately assist in the resolution of these problems.

June 11, 1979


-3-

Each agency shall:

1. establish the necessary guidelines and structure to adequately carry out the policy.
2. designate a key executive with the authority to establish intra-agency policies for metrication and to represent and speak for the agency in interagency forums.
3. identify on a continuing basis measurement-sensitive policies and procedures for which it is responsible, and prepare new or revised regulations, standards, specifications, procurement policies, and, if appropriate, legislative proposals, to remove barriers to metric conversion.

June 11, 1979

DATE

  
\_\_\_\_\_  
Louis F. Polk  
Chairman, Interagency Committee  
on Metric Policy

APPENDIX D  
THE SENATE OF CANADA (BILL S-10)

Fourth Session, Thirtieth Parliament,  
27 Elizabeth II, 1978

Quatrième Session, Trentième Législature,  
27 Elizabeth II, 1978

**THE SENATE OF CANADA**

**SÉNAT DU CANADA**

**BILL S-10**

**BILL S-10**

An Act to facilitate conversion to the metric system of  
measurement

Loi facilitant la conversion au système métrique

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First reading, Thursday, 30th November, 1978

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Première lecture, le jeudi 30 novembre 1978

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THE HONOURABLE SENATOR PERRAULT, P.C.

L'HONORABLE SÉNATEUR PERRAULT, C.P.

THE SENATE OF CANADA

SÉNAT DU CANADA

BILL S-10

BILL S-10

An Act to facilitate conversion to the metric  
system of measurement

Loi facilitant la conversion au système  
métrique

Her Majesty, by and with the advice and  
consent of the Senate and House of Com-  
mons of Canada, enacts as follows:

Sa Majesté, sur l'avis et du consentement  
du Sénat et de la Chambre des communes du  
Canada, décrète:

SHORT TITLE

TITRE ABRÉGÉ

Short title

1. This Act may be cited as the *Statute  
Law (Metric Conversion) Amendment Act,  
1978*.

1. La présente loi peut être citée sous le  
titre: *Loi de 1978 modifiant le droit statu-  
taire (conversion au système métrique)*.

Titre abrégé

R.S., c. A-13

ANIMAL DISEASE AND PROTECTION ACT

LOI SUR LES MALADIES ET LA PROTECTION  
DES ANIMAUX

S.R.C. A-13

2. Section 24 of the *Animal Disease and  
Protection Act* is repealed and the following  
substituted therefor:

2. L'article 24 de la *Loi sur les maladies  
et la protection des animaux* est abrogé et  
remplacé par ce qui suit:

Notice to  
occupant

"24. When, under this Act, an inspector 10  
makes a declaration that constitutes a  
place an infected place, he may also, if the  
circumstances of the case appear to him so  
to require, deliver a notice under his hand  
of such declaration to the occupiers of all 15  
lands and buildings adjoining thereto, any  
part whereof respectively lies within two  
kilometres of the boundaries of the infect-  
ed place in any direction; and thereupon  
the provisions of this Act with respect to 20  
infected places apply to and have effect in  
respect of such lands and buildings as if  
they were actually within the limits of the  
infected place."

"24. Lorsque, sous l'autorité de la pré- 10  
sente loi, un inspecteur déclare par procès-  
verbal qu'un lieu est infecté, il peut aussi,  
si les circonstances lui paraissent l'exiger,  
délivrer sous son seing un avis de ce pro-  
cès-verbal aux occupants des terres et bâti- 15  
ments avoisinants, dont quelque partie se  
trouve dans un rayon de deux kilomètres  
des limites du lieu infecté. Dès lors, les  
dispositions de la présente loi concernant  
les lieux infectés sont applicables et execu- 20  
toires à l'égard de ces terres et bâtiments,  
comme s'ils se trouvaient réellement com-  
pris dans les limites du lieu infecté."

Avis à  
l'occupant

#### EXPLANATORY NOTES

*Clause 2:* This amendment to the *Animal Disease and Protection Act* would convert the measurement of distance from one mile to two kilometres.

#### NOTES EXPLICATIVES

*Article 2 du bill:* Cette modification à la *Loi sur les maladies et la protection des animaux* remplace la mesure de distance d'un mille par deux kilomètres.

R.S., c. C-34

## CRIMINAL CODE

## CODE CRIMINEL

S.R., c. C-34

3. (1) Subsection 81(2) of the *Criminal Code* is repealed and the following substituted therefor:

"prize fight"

"(2) In this section, "prize fight" means an encounter or fight with fists or hands between two persons who have met for that purpose by previous arrangement made by or for them, but a boxing contest between amateur sportsmen, where the contestants wear boxing gloves of not less than one hundred and forty grams each in mass, or any boxing contest held with the permission or under the authority of an athletic board or commission or similar body established by or under the authority of the legislature of a province for the control of sport within the province, shall be deemed not to be a prize fight."

1976-77, c. 53,  
s. 3

(2) Paragraph (d) of the definition "prohibited weapon" in subsection 82(1) of the said Act is repealed and the following substituted therefor:

"(d) any firearm adapted from a rifle or a shotgun, whether by sawing, cutting or other alteration or modification, that, as so adapted, has a barrel that is less than forty-five centimetres in length or that is less than sixty-six centimetres in overall length, or"

1976-77, c. 53,  
s. 3

(3) Subparagraphs (b)(i) and (ii) of the definition "restricted weapon" in subsection 82(1) of the said Act are repealed and the following substituted therefor:

"(i) is not a prohibited weapon, has a barrel that is less than forty-seven centimetres in length and is capable of discharging centre-fire ammunition in a semi-automatic manner, or  
(ii) is designed or adapted to be fired when reduced to a length of less than sixty-six centimetres by folding, telescoping or otherwise, or"

1976-77, c. 53,  
s. 3

(4) Paragraph 82(2)(d) of the said Act is repealed and the following substituted therefor:

3. (1) Le paragraphe 81(2) du *Code criminel* est abrogé et remplacé par ce qui suit:

«(2) Au présent article, «combat concerté» signifie un match ou combat, avec les poings ou les mains, entre deux personnes qui se sont rencontrées à cette fin par arrangement préalable conclu par elles, ou pour elles; cependant, n'est pas réputé combat concerté un match de boxe entre des sportifs amateurs, lorsque les adversaires portent des gants de boxe pesant au moins cent quarante grammes chacun, ou un match de boxe tenu avec la permission ou sous l'autorité d'une commission athlétique ou d'un corps semblable établi par la législature d'une province, ou sous son autorité, pour la régie du sport dans la province.»

«combat  
concerté»

(2) L'alinéa d) de la définition d'«arme prohibée» au paragraphe 82(1) de ladite loi est abrogé et remplacé par ce qui suit:

1976-77, c. 53,  
art. 3

«d) toute arme à feu sciée, coupée ou modifiée de façon à ce que la longueur du canon soit inférieure à quarante-cinq centimètres ou de façon à ce que la longueur totale de l'arme soit inférieure à soixante-six centimètres, ou»

(3) Les sous-alinéas b)(i) et (ii) de la définition d'«arme à autorisation restreinte» au paragraphe 82(1) de ladite loi sont abrogés et remplacés par ce qui suit:

1976-77, c. 53,  
art. 3

«(i) n'est pas une arme prohibée, est munie d'un canon de moins de quarante-sept centimètres de longueur et peut tirer des munitions à percussion centrale d'une manière semi-automatique, ou  
(ii) est conçue ou adaptée pour tirer lorsqu'elle est réduite à une longueur de moins de soixante-six centimètres par repliement, emboîtement ou autrement, ou»

(4) L'alinéa 82(2)d) de ladite loi est abrogé et remplacé par ce qui suit:

1976-77, c. 53,  
art. 3

*Clause 3:* (1) This amendment to the *Criminal Code* would convert the mass of boxing gloves from ounces to grams.

*Article 3 du bill:* (1) Cette modification au *Code criminel* remplace l'once par le gramme comme unité de mesure de la masse des gants de boxe.

(2) and (3) These amendments to the said Act would convert the measurement of length from inches to centimetres.

(2) et (3) Ces modifications à ladite loi remplacent le pouce par le centimètre comme unité de mesure de longueur.

(4) This amendment to the said Act would convert the measurement of velocity from feet per second to metres per second.

(4) Cette modification à ladite loi remplace le pied par seconde par le mètre par seconde comme unité de mesure de vitesse.



"(d) any other barrelled weapon where it is proved that such weapon is not designed or adapted to discharge a shot, bullet or other missile at a muzzle velocity exceeding one hundred and sixty metres per second or to discharge a shot, bullet or other missile that is designed or adapted to attain a velocity exceeding one hundred and sixty metres per second." 10

(5) Paragraphs 352(1)(c)(i) and (ii) of the said Act are repealed and the following substituted therefor:

"(i) any rock or mineral of a value of eleven cents per kilogram or more, 15  
(ii) any mica of a value of three cents per kilogram or more, or"

(6) Paragraph 432(b) of the said Act is repealed and the following substituted therefor: 20

"(b) where an offence is committed on the boundary of two or more territorial divisions or within five hundred metres of any such boundary, or the offence was commenced within one territorial 25 division and completed within another, the offence shall be deemed to have been committed in any of the territorial divisions;"

(7) Paragraph 453(1)(h) of the said Act is 30 repealed and the following substituted therefor:

"(h) if the person is not ordinarily resident in the province in which he is in custody or does not ordinarily reside 35 within two hundred kilometres of the place in which he is in custody, release the person upon his entering into a recognizance before the officer in charge without sureties in such amount 40 not exceeding five hundred dollars as the officer in charge directs and, if the officer in charge so directs, upon his depositing with the officer in charge such sum of money or other valuable 45 security not exceeding in amount or value five hundred dollars, as the officer in charge directs."

"d) toute autre arme pourvue d'un canon dont il est démontré qu'elle n'est ni conçue ni adaptée pour tirer du plomb, des balles ou quelque autre projectile à une vitesse initiale de plus de 5 cent soixante mètres par seconde ni pour tirer du plomb, des balles ou quelque autre projectile conçus ou adaptés pour atteindre une telle vitesse."

(5) Les sous-alinéas 352(1)c)(i) et (ii) de 10 ladite loi sont abrogés et remplacés par ce qui suit:

"(i) de la roche ou du minerai d'une valeur d'au moins onze cents le kilogramme, 15  
(ii) du mica d'une valeur d'au moins trois cents le kilogramme, ou"

(6) L'alinéa 432b) de ladite loi est abrogé et remplacé par ce qui suit:

"b) lorsqu'une infraction est commise 20 sur la limite de deux ou plusieurs circonscriptions territoriales, ou dans les cinq cents mètres d'une telle limite, ou si elle est commencée dans l'une de ces circonscriptions et consommée dans une 25 autre, l'infraction est censée avoir été commise en n'importe laquelle des circonscriptions territoriales;"

(7) L'alinéa 453(1)h) de ladite loi est 30 abrogé et remplacé par ce qui suit: <sup>c 2 (2<sup>e</sup> Suppl.) art 5</sup>

"h) si elle ne réside pas ordinairement dans la province où elle est sous garde ou dans un rayon de deux cents kilomètres du lieu où elle est sous garde, la 35 mettre en liberté pourvu qu'elle contracte devant le fonctionnaire responsable, sans caution, un engagement d'un montant d'au plus cinq cents dollars que fixe le fonctionnaire responsable et, si le fonctionnaire responsable l'ordonne, 40 qu'elle dépose auprès du fonctionnaire responsable telle somme d'argent ou autre valeur, ne dépassant pas le montant ou la valeur de cinq cents dollars, que fixe le fonctionnaire responsable." 45

(5) This amendment to the said Act would convert the measurement of mass from pounds to kilograms and would as a result convert the corresponding value amounts to reflect this change in the measurement unit.

(5) Cette modification à ladite loi remplace la livre par le kilogramme comme unité de mesure de masse et par conséquent, modifie la valeur correspondante des montants.

(6) This amendment to the said Act would convert the measurement of distance from yards to metres.

(6) Cette modification à ladite loi remplace le yard par le mètre comme unité de mesure de distance.

(7), (8) and (9) These amendments to the said Act would convert the measurement of distance from miles to kilometres.

(7), (8) et (9) Ces modifications à ladite loi remplacent le mille par le kilomètre comme unité de mesure de distance.

c. 2 (2nd  
Supp.), s. 5

(8) Paragraph 453.1(g) of the said Act is repealed and the following substituted therefor:

"(g) if the person is not ordinarily resident in the province in which he is in custody or does not ordinarily reside within two hundred kilometres of the place in which he is in custody, release the person upon his entering into a recognizance before the officer in charge without sureties in such amount not exceeding five hundred dollars as the officer in charge directs and, if the officer in charge so directs, upon his depositing with the officer in charge such sum of money or other valuable security not exceeding in amount or value five hundred dollars, as the officer in charge directs."

c. 2 (2nd  
Supp.), s. 5

(9) Paragraph 457(2)(d) of the said Act is repealed and the following substituted therefor:

"(d) if the accused is not ordinarily resident in the province in which he is in custody or does not ordinarily reside within two hundred kilometres of the place in which he is in custody, upon his entering into a recognizance before the justice with or without sureties in such amount and with such conditions, if any, as the justice directs, and upon his depositing with the justice such sum of money or other valuable security as the justice directs."

(8) L'alinéa 453.1(g) de ladite loi est abrogé et remplacé par ce qui suit:

«(g) si elle ne réside pas ordinairement dans la province où elle est sous garde ou dans un rayon de deux cents kilomètres du lieu où elle est sous garde, la mettre en liberté pourvu qu'elle contracte devant le fonctionnaire responsable, sans caution, un engagement d'un montant d'au plus cinq cents dollars que fixe le fonctionnaire responsable et, si le fonctionnaire responsable l'ordonne, qu'elle dépose auprès du fonctionnaire responsable telle somme d'argent ou autre valeur, ne dépassant pas le montant ou la valeur de cinq cents dollars, que fixe le fonctionnaire responsable.»

c. 2 (2<sup>e</sup> Supp.  
art. 5

(9) L'alinéa 457(2)d) de ladite loi est abrogé et remplacé par ce qui suit:

«(d) si le prévenu ne réside pas ordinairement dans la province où il est sous garde ou dans un rayon de deux cents kilomètres du lieu où il est sous garde, pourvu qu'il contracte devant le juge de paix, avec ou sans cautions, un engagement dont le montant et les conditions, s'il en est, sont fixés par le juge de paix, et qu'il dépose auprès du juge de paix la somme d'argent ou autre valeur que le juge de paix fixe.»

c. 2 (2<sup>e</sup> Supp.  
art. 5

R.S., c. D-9

## DRY DOCKS SUBSIDIES ACT

4. (1) Subparagraphs 7(a)(i) and (ii) of the *Dry Docks Subsidies Act* are repealed and the following substituted therefor:

"(i) dry docks, other than floating dry docks, of dimensions when completed of not less than the principal dimensions next hereinafter mentioned, that is to say, clear length on bottom from caisson groove or hollowquoin to head, three hundred and fifty metres, clear width of entrance, 45

LOI SUR LES SUBVENTIONS AUX BASSINS DE  
RADOUB

4. (1) Les sous-alinéas 7a)(i) et (ii) de la *Loi sur les subventions aux bassins de radoub* sont abrogés et remplacés par ce qui suit:

«(i) bassins de radoub, autres que les cales flottantes, ayant à leur achèvement au moins les dimensions principales ci-après mentionnées, savoir: longueur dégagée au fond entre la gaine des caissons, ou arête rentrante, 40 et la tête, trois cent cinquante mètres; largeur dégagée de l'entrée, trente-

S.R., c. D-9

*Clause 4:* (1) to (3) These amendments to the *Dry Docks Subsidies Act* would convert the measurement of depth from feet to metres and of displacement from tons to tonnes.

The relevant portions of section 7 at present read as follows:

"(a)

(i) dry docks, other than floating dry docks, of dimensions when completed of not less than the principal dimensions next hereinafter mentioned, that is to say, clear length on bottom from caisson groove or hollowquoin to head, *eleven* hundred and fifty feet, clear width of entrance, *one hundred and*

*Article 4 du bill:* (1) à (3) Ces modifications à la *Loi sur les subventions aux bassins de radoub* remplacent le pied par le mètre comme unité de mesure de la profondeur et le tonneau par la tonne métrique comme unité de mesure de la capacité des cales flottantes.

Les parties pertinentes de l'article 7 se lisent comme suit:

"a)

(i) bassins de radoub, autres que les cales flottantes, ayant à leur achèvement au moins les dimensions principales ci-après mentionnées, savoir: longueur dégagée au fond entre la gaine des caissons, ou arête rentrante, et la tête, *onze cent cinquante*

thirty-eight metres, depth of water over the sill at high water ordinary spring tides, 11.5 m (metres), and

(ii) floating dry docks of a lifting capacity of at least twenty-five thousand tonnes, in which vessels can be received and repaired with ease and safety,"

(2) Subparagraphs 7(b)(i) and (ii) of the said Act are repealed and the following substituted therefor:

"(i) dry docks, other than floating dry docks, of dimensions when completed of not less than the principal dimensions next hereinafter mentioned, that is to say, clear length on bottom from caisson groove or hollowquoin to head, two hundred metres, clear width of entrance, twenty-six metres, depth of water over the sill at high water ordinary spring tides, nine metres if constructed on tidal waters and 7.5 m (metres) over the sill at ordinary low water if constructed on non-tidal waters, and

(ii) floating dry docks of a lifting capacity of at least fifteen thousand tonnes, and in which vessels can be received and repaired with ease and safety;"

(3) Subparagraphs 7(c)(i) and (ii) of the said Act are repealed and the following substituted therefor:

"(i) dry docks, other than floating dry docks, of dimensions when completed of not less than the principal dimensions next hereinafter mentioned, that is to say, clear length on bottom from caisson groove or hollowquoin to head, one hundred and twenty-two metres, clear width of entrance, twenty metres, depth of water over the sill at high water ordinary spring tides, seven metres if constructed on tidal waters and 5.5 m (metres) over the sill at ordinary low

huit mètres; profondeur de l'eau au-dessus du busc à marée haute des grandes eaux ordinaires, 11.5 m (mètres), et

(ii) cales flottantes, dans lesquelles des navires d'un tonnage de déplacement d'au moins vingt-cinq mille tonnes métriques peuvent, avec facilité et sûreté, être reçus et réparés,"

(2) Les sous-alinéas 7b)(i) et (ii) de ladite loi sont abrogés et remplacés par ce qui suit:

«(i) bassins de radoub, autres que les cales flottantes, ayant à leur achèvement au moins les dimensions principales ci-après mentionnées, savoir: longueur dégagée au fond entre la gaine des caissons, ou arête rentrante, et la tête, deux cents mètres; largeur dégagée de l'entrée, vingt-six mètres; profondeur de l'eau au-dessus du busc, neuf mètres à marée haute des grandes eaux ordinaires, s'ils sont construits sur des rives sujettes à l'action des marées, et 7.5 m (mètres) au niveau de l'eau basse ordinaire, s'ils sont construits sur des points où la marée ne se fait pas sentir, et

(ii) cales flottantes, dans lesquelles des navires d'un tonnage de déplacement d'au moins quinze mille tonnes métriques peuvent, avec facilité et sûreté, être reçus et réparés;»

(3) Les sous-alinéas 7c)(i) et (ii) de ladite loi sont abrogés et remplacés par ce qui suit:

«(i) bassins de radoub, autres que les cales flottantes, ayant à leur achèvement au moins les dimensions principales ci-après mentionnées, savoir: longueur dégagée au fond entre la gaine des caissons, ou arête rentrante, et la tête, cent vingt-deux mètres; largeur dégagée de l'entrée, vingt mètres; profondeur de l'eau au-dessus du busc, sept mètres aux grandes eaux ordinaires, s'ils sont construits à des endroits où la marée se fait sentir, et 5.5 m (mètres) au niveau de l'eau

*twenty-five feet, depth of water over sill at high water ordinary spring tides, thirty-eight feet, and*

(ii) floating dry docks of a lifting capacity of at least twenty-five thousand *tons*, in which vessels can be received and repaired with ease and safety."

"(b)

(i) dry docks, other than floating dry docks, of dimensions when completed of not less than the principal dimensions next hereinafter mentioned, that is to say, clear length on bottom from caisson groove or hollowquoin to head, *six hundred and fifty feet*, clear width of entrance, *eighty-five feet*, depth of water over the sill at high water ordinary spring tides, *thirty feet* if constructed on tidal waters and *twenty-five feet* over the sill at ordinary low water if constructed on non-tidal waters, and

(ii) floating dry docks of a lifting capacity of at least fifteen thousand *tons*, and in which vessels can be received and repaired with ease and safety."

"(c)

(i) dry docks, other than floating dry docks, of dimensions when completed of not less than the principal dimensions next hereinafter mentioned, that is to say, clear length on bottom from caisson groove or hollowquoin to head, *four hundred feet*, clear width of entrance, *sixty-five feet*, depth of water over the sill at high water ordinary spring tides, *twenty-two feet* if constructed on tidal waters and *eighteen feet* over the sill at ordinary low water if constructed on non-tidal waters, and

(ii) floating dry docks of a lifting capacity of at least three thousand five hundred *tons*, and in which vessels can be received and repaired with ease and safety."

*pieds; largeur dégagée de l'entrée, cent vingt-cinq pieds; profondeur de l'eau au-dessus du busc à marée haute des grandes eaux ordinaires, trente-huit pieds, et*

(ii) cales flottantes, dans lesquelles des navires d'un tonnage de déplacement d'au moins vingt-cinq mille *tonneaux* peuvent, avec facilité et sûreté, être reçus et réparés."

"(b)

(i) bassins de radoub, autres que les cales flottantes, ayant à leur achèvement au moins les dimensions principales ci-après mentionnées, savoir: longueur dégagée au fond entre la gaine des caissons ou arête rentrante, et la tête, *six cent cinquante pieds*; largeur dégagée de l'entrée, *quatre-vingt-cinq pieds*; profondeur de l'eau au-dessus du busc, *trente pieds* à marée haute des grandes eaux ordinaires, s'ils sont construits sur des rives sujettes à l'action des marées, et *vingt-cinq pieds* au niveau de l'eau basse ordinaire, s'ils sont construits sur des points où la marée ne se fait pas sentir; et

(ii) cales flottantes, dans lesquelles des navires d'un tonnage de déplacement d'au moins quinze mille *tonneaux* peuvent, avec facilité et sûreté, être reçus et réparés."

"(c)

(i) bassins de radoub, autres que les cales flottantes, ayant à leur achèvement au moins les dimensions principales ci-après mentionnées, savoir: longueur dégagée au fond entre la gaine des caissons, ou arête rentrante, et la tête, *quatre cents pieds*; largeur dégagée de l'entrée, *soixante-cinq pieds*; profondeur de l'eau au-dessus du busc, *vingt-deux pieds* aux grandes eaux ordinaires, s'ils sont construits à des endroits où la marée se fait sentir, et *dix-huit pieds* au niveau de l'eau basse ordinaire, s'ils sont construits à des endroits où il n'y a pas de marée; et

(ii) cales flottantes, dans lesquelles des navires d'un tonnage de déplacement d'au moins trois mille cinq cents *tonneaux* peuvent, avec facilité et sûreté, être reçus et réparés."

water if constructed on non-tidal waters, and

(ii) floating dry docks of a lifting capacity of at least three thousand five hundred tonnes, and in which vessels can be received and repaired with ease and safety."

basse ordinaire, s'ils sont construits à des endroits où il n'y a pas de marée, et

(ii) cales flottantes, dans lesquelles des navires d'un tonnage de déplacement d'au moins trois mille cinq cents tonnes métriques peuvent, avec facilité et sûreté, être reçus et réparés."

R.S., 1952, c.  
148

#### INCOME TAX ACT

5. (1) All that portion of subsection 54.1(2) of the *Income Tax Act* immediately following paragraph (c) thereof is repealed 10 and the following substituted therefor:

"whether jointly with another person or otherwise in the year and that at all times was at least 40 km (kilometres) farther from his or his spouse's new 15 place of employment than was his subsequent place or places of residence."

(2) All that portion of subsection 62(1) of the said Act immediately following paragraph (b) thereof and preceding paragraph (c) thereof is repealed and the following substituted therefor:

"and by reason thereof has moved from the residence in Canada at which, before the move, he ordinarily resided 25 on ordinary working days (hereinafter referred to as his "old residence"), to a residence in Canada at which, after the move, he ordinarily so resided (hereinafter referred to as his "new residence"), so that the distance between his old residence and his new work location is not less than 40 km (kilometres) greater than the distance between his 35 new residence and his new work location, in computing his income for the taxation year in which he moved from his old residence to his new residence or for the immediately following taxation year, there may be deducted amounts 40 paid by him as or on account of moving expenses incurred in the course of moving from his old residence to his new residence, to the extent that"

#### LOI DE L'IMPÔT SUR LE REVENU

S.R. de 1952, c.  
148

5. (1) La partie du paragraphe 54.1(2) de la *Loi de l'impôt sur le revenu* qui suit 10 l'alinéa c) est abrogée et remplacée par ce qui suit:

«soit conjointement avec une autre personne, soit autrement, dans l'année et qui, à tout moment, était plus éloigné 15 d'au moins 40 km (kilomètres) de son nouveau lieu d'emploi ou de celui de son conjoint que de son ou ses lieux subséquents de résidence.»

(2) La partie du paragraphe 62(1) de ladite loi qui suit l'alinéa b) et qui précède l'alinéa c) est abrogée et remplacée par ce qui suit:

«et a, de ce fait, déménagé d'une résidence sise au Canada où, avant le déménagement, il résidait habituellement 25 pendant les jours de travail ordinaires (appelée ci-après son «ancienne résidence») pour venir occuper une autre résidence sise au Canada où, après le 30 déménagement, il a résidé habituellement (appelée ci-après sa «nouvelle résidence»), de sorte que la distance entre son ancienne résidence et son nouveau lieu de travail soit supérieure d'au moins 35 40 km (kilomètres) à la distance entre sa nouvelle résidence et son nouveau lieu de travail, il peut déduire, lors du calcul de son revenu pour l'année d'imposition au cours de laquelle il a déménagé de 40 son ancienne résidence pour venir occuper sa nouvelle résidence, ou pour l'année d'imposition suivante, les sommes qu'il a payées à titre ou au titre des frais de déménagement engagés pour déménager 45 de son ancienne résidence pour

*Clause 5:* (1), (2) and (3) These amendments to the *Income Tax Act* would convert the measurement of distance from miles to kilometres.

*Article 5 du bill:* (1), (2) et (3) Ces modifications à la *Loi de l'impôt sur le revenu* remplacent le mille par le kilomètre comme unité de mesure de distance.



(3) All that portion of subparagraph 110(1)(c)(viii.1) of the said Act immediately following clause (B) thereof and preceding clause (C) thereof is repealed and the following substituted therefor:

"from the locality where the patient was dwelling to a place, not less than 40 km (kilometres) from that locality, where medical services are normally provided, or from that place to that locality, if"

(4) Subsections (1) to (3) are applicable to the 1979 and subsequent taxation years.

venir occuper sa nouvelle résidence, dans la mesure où»

(3) La partie du sous-alinéa 110(1)(c)(viii.1) de ladite loi qui suit la disposition (B) et qui précède la disposition (C) est abrogée et remplacée par ce qui suit:

«de la localité où résidait le patient à un lieu, situé à 40 km (kilomètres) au moins de cette localité, où l'on prodigue habituellement des soins médicaux, ou de ce lieu à cette localité, si»

(4) Les paragraphes (1) à (3) s'appliquent aux années d'imposition 1979 et suivantes.

R.S., c. N-3

## NATIONAL CAPITAL ACT

6. The schedule to the *National Capital Act* is amended by substituting for the expression "one thousand eight hundred 15 square miles", where it appears therein, the expression "four thousand seven hundred square kilometres".

R.S., c. N-6

## NATIONAL ENERGY BOARD ACT

7. (1) Subsection 3(7) of the *National Energy Board Act* is repealed and the following 20 substituted therefor:

Residence of members

"(7) Each member shall during his term of office reside in the city of Ottawa or within forty kilometres thereof or within such other distance thereof as the Governor 25 in Council determines."

(2) Subparagraph 49(1)(a)(i) of the said Act is repealed and the following substituted therefor:

"(i) pipelines or branches or extensions 30 to pipelines, not exceeding in any case forty kilometres in length, and"

(3) Subsections 70(1) and (2) of the said Act are repealed and the following substituted therefor:

Protection of pipeline from mining operations

"70. (1) No person shall work or prospect for mines or minerals lying under a pipeline or any of the works connected therewith, or within forty metres there-

## LOI SUR LA CAPITALE NATIONALE

S.R., c. N-3

6. L'annexe à la *Loi sur la Capitale nationale* est modifiée en remplaçant l'ex- 15 pression «mille huit cents milles carrés» là où elle apparaît par celle de «quatre mille sept cents kilomètres carrés».

## LOI SUR L'OFFICE NATIONAL DE L'ÉNERGIE

S.R., c. N-6

7. (1) Le paragraphe 3(7) de la *Loi sur l'Office national de l'énergie* est abrogé et 20 remplacé par ce qui suit:

Résidences des membres

«(7) Chaque membre doit, durant son mandat, résider dans la ville d'Ottawa, ou dans un rayon de quarante kilomètres de ladite ville, ou dans tel autre rayon de 25 celle-ci que le gouverneur en conseil détermine.»

(2) Le sous-alinéa 49(1)(a)(i) de ladite loi est abrogé et remplacé par ce qui suit:

«(i) les pipe-lines ou embranchements 30 ou extensions de pipe-lines, qui n'excèdent en aucun cas une longueur de quarante kilomètres, et»

(3) Les paragraphes 70(1) et (2) de ladite loi sont abrogés et remplacés par ce qui suit: 35

Protection du pipe-line contre les opérations minières

«70. (1) Nul ne doit exploiter des mines ou minéraux gisant sous un pipe-line ou sous l'un des ouvrages qui en dépendent, ou se trouvant à une distance d'au plus

*Clause 6:* This amendment to the *National Capital Act* would convert the measurement of area from one thousand eight hundred square miles to four thousand seven hundred square kilometres.

*Article 6 du bill:* Cette modification à la *Loi sur la Capitale nationale* remplace la mesure de superficie de mille huit cents milles carrés par quatre mille sept cents kilomètres carrés.

*Clause 7:* (1) and (2) These amendments to the *National Energy Board Act* would convert the measurement of distance from twenty-five miles to forty kilometres.

*Article 7 du bill:* (1) et (2) Ces modifications à la *Loi sur l'Office national de l'énergie* remplacent les mesures de distance de vingt-cinq milles par quarante kilomètres.

(3) This amendment would convert the measurement of distance from forty yards to forty metres.

(3) Cette modification remplace la mesure de distance de quarante verges par quarante mètres.

from, until leave therefor has been obtained from the Board.

quarante mètres dudit pipe-line ou ouvrage, ni prospecter pour en trouver, avant d'avoir obtenu de l'Office une autorisation à cet effet.

Use of oil and gas

(2) Notwithstanding subsection (1), leave from the Board is not required in the case of a well taking oil or gas from lands lying under a pipeline or any of the works connected therewith if the well is not drilled within forty metres of the pipeline."

(2) Nonobstant le paragraphe (1), l'autorisation de l'Office n'est pas requise dans le cas d'un puits prenant du pétrole ou du gaz dans des terrains situés sous un pipe-line ou l'un quelconque des ouvrages s'y rattachant si le puits n'est pas foré dans les quarante mètres du pipe-line.»

Utilisation de pétrole et de gaz

(4) Section 73 of the said Act is repealed and the following substituted therefor:

(4) L'article 73 de ladite loi est abrogé et 10 remplacé par ce qui suit:

Lands that may be taken

"73. Subject to section 74, the lands that may, without the consent of the owner, be taken for the right-of-way of a pipeline shall not exceed twenty metres in breadth."

"73. Sous réserve de l'article 74, les terrains qui peuvent être pris sans le consentement du propriétaire, pour l'emprise d'un pipe-line, ne doivent pas dépasser vingt mètres de largeur."

Terrains qui peuvent être pris

R.S., c. P-3

#### PASSENGER TICKETS ACT

#### LOI SUR LES BILLETS DE TRANSPORT

S.R., c. P-3

8. Subsection 9(3) of the *Passenger Tickets Act* is repealed and the following substituted therefor:

8. Le paragraphe 9(3) de la *Loi sur les billets de transport* est abrogé et remplacé 20 par ce qui suit:

Distance limit

"(3) No such passenger is entitled to have such time extended for more than two days for every eighty kilometres of distance to be travelled in Canada."

"(3) Nul voyageur n'a le droit de faire prolonger ce temps de plus de deux jours pour chaque distance de quatre-vingts kilomètres qui doit être parcourue au 25 Canada."

Limite de distance

1974-75-76, c. 47

#### PETROLEUM ADMINISTRATION ACT

#### LOI SUR L'ADMINISTRATION DU PÉTROLE

1974-75-76, c. 47

9. (1) The definition "barrel" in subsection 4(1) of the *Petroleum Administration Act* is repealed and the following substituted therefor:

9. (1) La définition de «baril» figurant au paragraphe 4(1) de la *Loi sur l'administration du pétrole* est abrogée et remplacée par ce qui suit:

"barrel"  
«baril»

" "barrel" means 0.158 987 3 m<sup>3</sup> (cubic metres);"

«baril» équivaut à 0,158 987 3 m<sup>3</sup> (mètres cubes);»

«baril»  
"barrel"

(2) Subsection 4(2) of the said Act is repealed and the following substituted therefor:

(2) Le paragraphe 4(2) de ladite loi est abrogé et remplacé par ce qui suit:

Calculation for pipeline traffic

"(2) For the purpose of calculating the number of cubic metres of oil that have been exported by pipeline during a period in which a specified charge applies to such exportation, the period shall be deemed to commence at seven o'clock mountain standard time in the forenoon of the day on which that charge is imposed and to

35 (2) Pour le calcul du nombre de mètres cubes de pétrole exportés par pipe-line pendant une période durant laquelle s'applique une redevance donnée, cette période est censée commencer à sept heures du matin, heure normale des Rocheuses, le jour où cette redevance est imposée, et se terminer à sept heures du matin, heure

35 Calcul du débit d'un pipe-line

(4) This amendment would convert the measurement of distance from sixty feet to twenty metres.

(4) Cette modification remplace la mesure de distance de soixante pieds par vingt mètres.

*Clause 8:* This amendment to the *Passenger Tickets Act* would convert the measurement of distance from fifty miles to eighty kilometres.

*Article 8 du bill:* Cette modification à la *Loi sur les billets de transport* remplace la mesure de distance de cinquante milles à quatre-vingts kilomètres.

*Clause 9:* (1) This amendment to the *Petroleum Administration Act* would convert the measurement unit of barrel in the definition thereof from standard gallons to cubic metres.

The definition "barrel" at present reads as follows:

" "barrel" means 34.9722 standard gallons within the meaning of subsection 13(1) of the *Weights and Measures Act*, being chapter W-7 of the *Revised Statutes of Canada*, 1970;"

(2), (3), (5), (7) and (8) These amendments would substitute cubic metres as the measurement unit for oil instead of barrels and would as a result convert the dollar amount of the charge for oil to reflect this change in the measurement unit.

Subsection 7(1) at present reads as follows:

"7. (1) There shall be imposed, levied and collected on each barrel of oil exported from Canada in any month *after the month of November, 1974* a charge in such amount not exceeding eight dollars a barrel as may be prescribed in a tariff of charges for that month made by order of the Governor in Council."

*Article 9 du bill:* (1) Cette modification à la *Loi sur l'administration du pétrole* remplace les gallons-étalons par des mètres cubes dans la définition de «baril».

Cette définition se lit comme suit:

«baril» équivaut à 34.9722 gallons-étalons au sens du paragraphe 13(1) de la *Loi sur les poids et mesures* soit le chapitre W-7 des *Statuts révisés du Canada* de 1970;»

(2), (3), (5), (7) et (8) Ces modifications remplacent les mesures de volume en barils par des mètres cubes et ajustent, en conséquence, la redevance à payer en dollars.

Le paragraphe 7(1) se lit comme suit:

«7. (1) Est imposée, levée et perçue sur chaque baril de pétrole exporté du Canada *après le mois de novembre 1974*, la redevance prévue au tarif mensuel qu'établit, par décret, le gouverneur en conseil. Celle-ci ne doit pas dépasser huit dollars le baril.»

end at seven o'clock mountain standard time in the forenoon of the day on which the charge is varied."

normale des Rocheuses, le jour où elle est modifiée.»

(3) Subsection 7(1) of the said Act is repealed and the following substituted therefor:

(3) Le paragraphe 7(1) de ladite loi est abrogé et remplacé par ce qui suit:

Imposition of charge

"7. (1) There shall be imposed, levied and collected on each barrel of oil exported from Canada in any month in the period commencing on the 1st day of 10 December, 1974 and ending on the last day of the month in which the day fixed by proclamation for the purpose of this subsection occurs, a charge in such amount 15 not exceeding eight dollars a barrel as may be prescribed in a tariff of charges for that month made by order of the Governor in Council.

«7. (1) Est imposée, levée et perçue sur chaque baril de pétrole exporté du Canada entre le 1<sup>er</sup> décembre 1974 et le dernier jour du mois où tombe le jour fixé par proclamation pour l'application du présent 10 paragraphe, la redevance prévue au tarif mensuel qu'établit, par décret, le gouverneur en conseil. Celle-ci ne doit pas dépasser huit dollars le baril.

Imposition de la redevance

Idem

(1.1) There shall be imposed, levied and collected on each cubic metre of oil exported from Canada in any month after the month in which the day fixed by proclamation for the purpose of this subsection occurs, a charge in such amount not exceeding fifty dollars a cubic metre as 25 may be prescribed in a tariff of charges for that month made by order of the Governor in Council."

(1.1) Est imposée, levée et perçue sur chaque mètre cube de pétrole exporté du 15 Canada après le mois où tombe le jour fixé par proclamation pour l'application du présent paragraphe, la redevance prévue au tarif mensuel qu'établit, par décret, le gouverneur en conseil. Celle-ci ne doit pas 20 dépasser cinquante dollars le mètre cube.»

Idem

(4) Subsection 7(3) of the said Act is repealed and the following substituted therefor:

(4) Le paragraphe 7(3) de ladite loi est abrogé et remplacé par ce qui suit:

Tariff continues

"(3) Where a tariff of charges on oil is prescribed in respect of any month under subsection (1.1), that tariff of charges shall continue in respect of each subsequent month until changed pursuant to subsection (1.1) by order of the Governor in Council in respect of a subsequent month."

«(3) Le tarif mensuel des redevances pétrolières établi en vertu du paragraphe 25 (1.1) reste en vigueur jusqu'à ce qu'il soit modifié par décret du gouverneur en conseil conformément au paragraphe (1.1).»

Reconduction du tarif

(5) Section 8 of the said Act is repealed and the following substituted therefor:

(5) L'article 8 de ladite loi est modifié et remplacé par ce qui suit: 30

Cubic metre equivalents

"8. (1) Where a unit of measurement other than the cubic metre is commonly used to measure the quantity of any kind of oil, the charge imposed by section 5 or 6 45 or pursuant to section 7 shall be imposed and levied on amounts thereof that are the equivalent of the cubic metre.

«8. (1) Lorsqu'une unité de mesure autre que le mètre cube est couramment utilisée pour mesurer une quantité de pétrole, la redevance imposée par les articles 5 ou 6 ou en vertu de l'article 7 est 35 imposée et levée sur les quantités équivalentes au mètre cube.

Équivalents du mètre cube

(4) and (6) Consequential on subclause (3).

(4) et (6) Découlent du paragraphe (3) du bill.

Power to  
prescribe  
equivalents

(2) For the purposes of this section, the Governor in Council may, by regulation, prescribe equivalents of cubic metres."

(6) Paragraphs 12(1)(a) and (b) of the said Act are repealed and the following substituted therefor:

"(a) exempt any exportation of oil from the charge imposed thereon in respect of any month under the tariff of charges prescribed pursuant to subsection 7(1) 10 or (1.1); or

(b) reduce any charge imposed in respect of any month on the exportation of oil under the tariff of charges prescribed pursuant to subsection 7(1) or 15 (1.1)."

1977-78, c. 24,  
s. 1

(7) All that portion of subsection 65.12(1) of the said Act following paragraph (b) thereof is repealed and the following substituted therefor:

"in any month after the month in which this Part comes into force and before the first day of the month following the month in which the day fixed by proclamation for the purpose of this subsection occurs, a charge in such amount not exceeding one dollar a barrel as may be prescribed in a tariff of charges for that month made by order of the Governor in Council."

(2) Aux fins du présent article, le gouverneur en conseil peut, par règlement, établir les équivalents du mètre cube."

(6) Les alinéas 12(1)(a) et b) de ladite loi 5 sont abrogés et remplacés par ce qui suit:

«a) exempter toute exportation de pétrole de la redevance prévue au tarif mensuel établi en application des paragraphes 7(1) ou (1.1); ou

b) réduire le montant de toute redevance sur les exportations de pétrole prévue au tarif mensuel établi en application des paragraphes 7(1) ou (1.1).»

Pouvoir de  
prescrire les  
équivalents

(7) La partie du paragraphe 65.12(1) de ladite loi qui précède l'alinéa a) est abrogée 15 et remplacée par ce qui suit:

«65.12 (1) Chaque mois après celui où entre en vigueur la présente Partie et avant le premier jour du mois suivant le mois où tombe le jour fixé par proclamation pour l'application du présent paragraphe, est imposée, levée et perçue,»

1977-78, c. 24,  
s. 1

(8) Section 65.12 of the said Act is further amended by adding thereto, immediately after subsection (1) thereof, the following subsection:

"(1.1) There shall be imposed, levied 35 and collected on

(a) each cubic metre of domestic petroleum received for processing or consumption in Canada, and

(b) each cubic metre of foreign 40 petroleum or petroleum product imported into Canada for processing, consumption, sale or other use in Canada

in any month after the month in which the day fixed by proclamation for the purpose 45 of this subsection occurs, a charge in such amount not exceeding six dollars and twenty-five cents a cubic metre as may be

(8) L'article 65.12 de ladite loi est en outre modifié par l'adjonction, après le para- 25 graphe (1), du paragraphe suivant:

«(1.1) Chaque mois après le mois où tombe le jour fixé par proclamation pour l'application du présent paragraphe, est imposée, levée et perçue, 30

a) sur chaque mètre cube de pétrole domestique reçu en vue de le traiter ou de le consommer au Canada, et

b) sur chaque mètre cube de pétrole étranger ou sur chaque produit pétrolier 35 importé au Canada en vue de le traiter, de le consommer, de le vendre ou d'en faire un autre usage au Canada

la redevance prévue au tarif mensuel qu'établit, par décret, le gouverneur en conseil. 40

1977-78, c. 24,  
art. 1

Idem

Idem

Subsection 65.12(1) at present reads as follows:

"65.12 (1) There shall be imposed, levied and collected on

(a) each barrel of domestic petroleum received for processing or consumption in Canada, and

(b) each barrel of foreign petroleum or petroleum product imported into Canada for processing, consumption, sale or other use in Canada

in any month after the month in which this Part comes into force, a charge in such amount not exceeding one dollar a barrel as may be prescribed in a tariff of charges for that month made by order of the Governor in Council."

Le paragraphe 65.12(1) se lit actuellement comme suit:

"65.12 (1) Chaque mois après celui où entre en vigueur la présente Partie, est imposée, levée et perçue,

a) sur chaque baril de pétrole domestique reçu en vue de le traiter ou de le consommer au Canada, et

b) sur chaque baril de pétrole étranger ou sur chaque produit pétrolier importé au Canada en vue de le traiter, de le consommer, de le vendre ou d'en faire un autre usage au Canada

la redevance prévue au tarif mensuel qu'établit, par décret, le gouverneur en conseil. Celle-ci ne doit pas dépasser un dollar le baril."



prescribed in a tariff of charges for that month made by order of the Governor in Council."

Celle-ci ne doit pas dépasser six dollars et vingt-cinq cents le mètre cube.»

1977-78, c. 24,  
s. 1

(9) Paragraphs 65.12(2)(a) and (b) of the said Act are repealed and the following substituted therefor:

(9) Les alinéas 65.12(2)a) et b) de ladite loi sont abrogés et remplacés par ce qui suit:

1977-78, c. 24,  
art. 1

"(a) the processor or consumer, as the case may be, in the case of paragraph (1)(a) or (1.1)(a); or

«a) celui qui traite le pétrole ou le consommateur, selon le cas, relativement aux alinéas (1)a) ou (1.1) a); ou

(b) the importer, in the case of paragraph (1)(b) or (1.1)(b)."

b) l'importateur, relativement aux alinéas (1)b) ou (1.1) b).»

1977-78, c. 24,  
s. 1

(10) Subsection 65.12(3) of the said Act is repealed and the following substituted therefor:

(10) Le paragraphe 65.12(3) de ladite loi est abrogé et remplacé par ce qui suit:

1977-78, c. 24,  
art. 1

Tariff continues

"(3) Where a tariff of charges on petroleum or petroleum products is prescribed in respect of any month under subsection (1) or (1.1), that tariff of charges shall continue in respect of each subsequent month until changed pursuant to subsection (1) or (1.1), as the case may be, by order of the Governor in Council in respect of a subsequent month."

«(3) Le tarif mensuel des redevances sur le pétrole et les produits pétroliers établi en vertu des paragraphes (1) ou (1.1) reste en vigueur jusqu'à ce qu'il soit modifié par décret du gouverneur en conseil conformément aux paragraphes (1) ou (1.1), selon le cas.»

Reconduction  
du tarif

(11) Subsections (2) to (10) shall come into force on a day to be fixed by proclamation for the purposes of subsections 7(1) and (1.1) and 65.12(1) and (1.1) of the *Petroleum Administration Act*.

(11) Les paragraphes (2) à (10) entrent en vigueur à la date fixée par proclamation pour l'application des paragraphes 7(1) et (1.1) et 65.12(1) et (1.1) de la *Loi sur l'administration du pétrole*.

R.S., c. S-1

ST. LAWRENCE SEAWAY AUTHORITY ACT

LOI SUR L'ADMINISTRATION DE LA VOIE MARITIME DU SAINT-LAURENT

S.R., c. S-1

10. The definition "deep waterway" in section 2 of the *St. Lawrence Seaway Authority Act* is repealed and the following substituted therefor:

10. La définition de «voie en eau profonde» figurant à l'article 2 de la *Loi sur l'Administration de la voie maritime du Saint-Laurent* est abrogée et remplacée par ce qui suit:

"deep  
waterway"

" "deep waterway" means adequate provision for navigation requiring a controlling channel depth of 8.23 m (metres) with a depth of 9.14 m (metres) over lock sills in general in accordance with paragraph (j) of the preliminary article of the Agreement between Canada and the United States providing for the Development of Navigation and Power in the Great Lakes-St. Lawrence Basin, dated the 19th day of March 1941;"

« «voie en eau profonde» signifie ce qui est suffisant pour la navigation requérant une utile profondeur de chenal de 8,23 m (mètres) avec une profondeur de 9,14 m (mètres) sur les seuils d'écluse, en général, conformément à l'alinéa j) de l'article préliminaire d'un accord entre le Canada et les États-Unis pour le développement de la navigation et l'aménagement de l'énergie dans le bassin des Grands Lacs et du Saint-Laurent, en date du 19 mars 1941.»

«voie en eau  
profonde»

(9) and (10) Consequential on subclause (8).

(9) et (10) Découlent du paragraphe (8) du bill.

*Clause 10:* This amendment to the *St. Lawrence Seaway Authority Act* would convert the measurement of depth from twenty-seven feet and thirty feet to 8.23 m (metres) and 9.14 m (metres), respectively.

*Article 10 du bill:* Cette modification à la *Loi sur l'administration de la voie maritime du Saint-Laurent* remplace les mesures de profondeur de vingt-sept et trente pieds par 8,23 m (mètres) et 9,14 m (mètres) respectivement.

R.S.C. Y-2

YUKON ACT

LOI SUR LE YUKON

S.R.C. Y-2

11. The Schedule to the *Yukon Act* is repealed and the following substituted therefor:

## "SCHEDULE

The Yukon Territory shall be bounded as follows: On the south, by the Province of British Columbia and the United States Territory of Alaska; on the west, by the said United States Territory of Alaska; on the north, by that part of the Arctic Ocean called Beaufort Sea; and on the east, by a line beginning at the intersection of the north boundary of British Columbia with a line passing through a boundary pipe post set in concrete, trench and mound, numbered 600, planted by the British Columbia-Yukon-Northwest Territories Boundary Commission approximately twenty metres westerly of the left bank of the Liard River, said line having a bearing of 309° with reference to the meridian through said post; thence north-westerly along said line to a point on the line of watershed separating the streams flowing into the Liard River below the La Biche River or into the Mackenzie River from those flowing into the La Biche River, into the Liard River above the La Biche River, or into the Yukon River; thence northwesterly along said line of watershed to the line of watershed of the basin of Peel River; thence northerly along the line of watershed between the Peel and Mackenzie Rivers to the sixty-seventh degree of north latitude; thence westerly along the parallel of the sixty-seventh degree of north latitude to the line of watershed between the Peel and Yukon Rivers; thence northerly along the said line of watershed to the trail across the portage in McDougall Pass between Rat and Bell Rivers; thence due north to the northern limit of the Yukon Territory; the said Territory to include the islands within 32.19 km (kilometres) from the shores of the Beaufort Sea as far as the aforesaid due north line from McDougall Pass."

11. L'annexe à la *Loi sur le Yukon* est abrogée et remplacée par ce qui suit:

## •ANNEXE

Le territoire du Yukon est borné ainsi qu'il suit: Au sud, par la province de la Colombie-Britannique et le territoire d'Alaska des États-Unis; à l'ouest par ledit territoire d'Alaska des États-Unis; au nord par la partie de l'océan Arctique appelée mer de Beaufort; et à l'est par une ligne commençant à l'intersection de la frontière septentrionale de la Colombie-Britannique et d'une ligne passant par une installation de bornage établie dans le béton, avec fosse et monticule, portant le numéro 600, posée par la Commission de la frontière de la Colombie-Britannique, du Yukon et des territoires du Nord-Ouest, à environ vingt mètres à l'ouest de la rive gauche de la rivière aux Liards, ladite ligne ayant un relèvement de 309° par rapport au méridien passant par ladite installation; de là, vers le nord-ouest, le long de ladite ligne jusqu'à un point sur le faite du plateau d'épanchement qui sépare les eaux se jetant dans la rivière aux Liards en aval de la rivière La Biche, ou dans le fleuve Mackenzie, de celles qui se jettent dans la rivière La Biche, dans la rivière aux Liards, en amont de la rivière La Biche, ou dans la rivière Yukon; de là, vers le nord-ouest, le long dudit faite du plateau d'épanchement des eaux, jusqu'au faite du plateau d'épanchement du bassin de la rivière Peel; de là, vers le nord en suivant le faite du plateau d'épanchement entre la rivière Peel et le fleuve Mackenzie, jusqu'au soixante-septième degré de latitude nord; de là, vers l'ouest, en suivant le parallèle du soixante-septième degré de latitude nord, jusqu'au faite du plateau d'épanchement entre les rivières Peel et Yukon; de là, vers le nord, en suivant ledit faite du plateau d'épanchement jusqu'au sentier qui traverse le portage, dans le col McDougall, entre les rivières au Rat et Bell; de là, franc nord, jusqu'à la limite septentrionale du territoire du Yukon; ledit territoire devant comprendre les îles situées dans les 32,19 km (kilomètres) des rives de la mer de Beaufort, aussi loin que la susdite ligne franc nord partant du col McDougall.

R.S., c. Y-2

YUKON ACT

LOI SUR LE YUKON

S.R., c. Y-2

11. The Schedule to the *Yukon Act* is repealed and the following substituted therefor:

## "SCHEDULE

The Yukon Territory shall be bounded as follows: On the south, by the Province of British Columbia and the United States Territory of Alaska; on the west, by the said United States Territory of Alaska; on the north, by that part of the Arctic Ocean called Beaufort Sea; and on the east, by a line beginning at the intersection of the north boundary of British Columbia with a line passing through a boundary pipe post set in concrete, trench and mound, numbered 600, planted by the British Columbia-Yukon-Northwest Territories Boundary Commission approximately twenty metres westerly of the left bank of the Liard River, said line having a bearing of 309° with reference to the meridian through said post; thence north-westerly along said line to a point on the line of watershed separating the streams flowing into the Liard River below the La Biche River or into the Mackenzie River from those flowing into the La Biche River, into the Liard River above the La Biche River, or into the Yukon River; thence northwesterly along said line of watershed to the line of watershed of the basin of Peel River; thence northerly along the line of watershed between the Peel and Mackenzie Rivers to the sixty-seventh degree of north latitude; thence westerly along the parallel of the sixty-seventh degree of north latitude to the line of watershed between the Peel and Yukon Rivers; thence northerly along the said line of watershed to the trail across the portage in McDougall Pass between Rat and Bell Rivers; thence due north to the northern limit of the Yukon Territory; the said Territory to include the islands within 32.19 km (kilometres) from the shores of the Beaufort Sea as far as the aforesaid due north line from McDougall Pass."

11. L'annexe à la *Loi sur le Yukon* est abrogée et remplacée par ce qui suit:

## «ANNEXE

Le territoire du Yukon est borné ainsi qu'il suit: Au sud, par la province de la Colombie-Britannique et le territoire d'Alaska des États-Unis; à l'ouest par ledit territoire d'Alaska des États-Unis; au nord par la partie de l'océan Arctique appelée mer de Beaufort; et à l'est par une ligne commençant à l'intersection de la frontière septentrionale de la Colombie-Britannique et d'une ligne passant par une installation de bornage établie dans le béton, avec fosse et monticule, portant le numéro 600, posée par la Commission de la frontière de la Colombie-Britannique, du Yukon et des territoires du Nord-Ouest, à environ vingt mètres à l'ouest de la rive gauche de la rivière aux Liards, ladite ligne ayant un relèvement de 309° par rapport au méridien passant par ladite installation; de là, vers le nord-ouest, le long de ladite ligne jusqu'à un point sur le faite du plateau d'épanchement qui sépare les eaux se jetant dans la rivière aux Liards en aval de la rivière La Biche, ou dans le fleuve Mackenzie, de celles qui se jettent dans la rivière La Biche, dans la rivière aux Liards, en amont de la rivière La Biche, ou dans la rivière Yukon; de là, vers le nord-ouest, le long dudit faite du plateau d'épanchement des eaux, jusqu'au faite du plateau d'épanchement du bassin de la rivière Peel; de là, vers le nord en suivant le faite du plateau d'épanchement entre la rivière Peel et le fleuve Mackenzie, jusqu'au soixante-septième degré de latitude nord; de là, vers l'ouest, en suivant le parallèle du soixante-septième degré de latitude nord, jusqu'au faite du plateau d'épanchement entre les rivières Peel et Yukon; de là, vers le nord, en suivant ledit faite du plateau d'épanchement jusqu'au sentier qui traverse le portage, dans le col McDougall, entre les rivières au Rat et Bell; de là, franc nord, jusqu'à la limite septentrionale du territoire du Yukon; ledit territoire devant comprendre les îles situées dans les 32,19 km (kilomètres) des rives de la mer de Beaufort, aussi loin que la susdite ligne franc nord partant du col McDougall.»

(9) and (10) Consequential on subclause (8).

(9) et (10) Découlent du paragraphe (8) du bill.

*Clause 10:* This amendment to the *St. Lawrence Seaway Authority Act* would convert the measurement of depth from twenty-seven feet and thirty feet to 8.23 m (metres) and 9.14 m (metres), respectively.

*Article 10 du bill:* Cette modification à la *Loi sur l'administration de la voie maritime du Saint-Laurent* remplace les mesures de profondeur de vingt-sept et trente pieds par 8,23 m (mètres) et 9,14 m (mètres) respectivement.

*Clause 11:* This amendment to the *Yukon Act* would convert the measurement of distance from one chain and twenty statute miles to twenty metres and 32.19 km (kilometres), respectively.

*Article 11 du bill:* Cette modification à la *Loi sur le Yukon* remplace les mesures de distance d'une chaîne par vingt mètres et de vingt milles anglais par 32,19 km (kilomètres).

**DATE**  
**ILME**